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ORIGINAL ARTICLES.

FACTS AND NEW EXPERIMENTS IN ILLUSTRATION OF THE VARIATIONS OF PULSE-WAVE VELOCITY IN MAN, AND BEARING UPON THE ELUCIDATION OF THE CAUSES WHICH PRODUCE THEM.

BY A. T. KEYT, M.D., CINCINNATI, O.

CHAPTER II.

This division of our subject we will study under the form of a series of propositions, and it is intended that the facts brought forward to substantiate the propositions stated shall also enlighten on the causes of the variations in question.

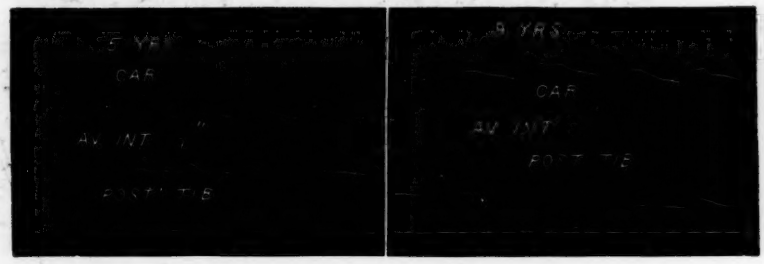

FIG. 26, 27.

PULSE-WAVE VELOCITY.

PROPOSITION. I.—The velocity of the pulse wave along the arteries increases with increase of age. This proposition has already been proven by our previous researches.* We observed and measured the pulse-wave velocity in a child of four and a half years, a man of twenty-five, and another of fifty. In the first the general velocity was 216 inches per second, in the second 306 inches, and in the third 416 inches per second. As a pertinent illustration of the fact in question, the accompanying figures representing new experiments may be studied. Fig. 26 is from a child five years old, and gives a carotid-posterior tibial interval of one-seventh second; his arterial length between the points of observation measured (approximately) 28 inches; hence his pulse-wave velocity was 196 inches per second.

Fig. 27 is from a boy nine years old; carotid-posterior tibial interval averaging two-thirteenth second, arterial distance 38 inches, velocity of pulse-wave 247 inches per second.

Fig. 28 is from a man, aged 21 years; carotid-posterior tibial interval one-seventh second; arterial distance 50 inches; velocity of pulse-wave 350 inches per second.

Fig. 29 is from a man aged 55 years; cardio-dorsalis pedis interval averaging one-tenth second; arterial distance 51 inches; velocity of pulse-wave 510 inches per second.

The fact that pulse-wave velocity increases with age, thus so thoroughly established, signals indeed a range of variation the widest that will be noted in all our results. What now is the cause of this marked variation with age?

Relating to the question as between the child and adult, there are four points that claim to be noticed, viz., feebler pulse-waves; smaller arteries; lower blood-pressure; and thinner arterial coats, in the child.

In the light of our experiments with tubes (1) feebler waves would have no modifying effect on pulse transmission; (2) smaller arteries would increase the rate; (3) lower blood-pressure would tend to diminish the rate; and (4) thinner arterial coats would decidedly slow the velocity of the pulse-wave. Of these factors of modification, it would seem to be just to consider the smaller arteries and lower blood-pressure as about counterbalancing each other, and then the thinner arterial coats would be left by the process of exclusion as the efficient cause of the pulse retardation in young children.

As between younger and older adults, it is plain that the only principle which can be invoked in explanation of the difference in pulse-wave velocity, is the increasing stiffening of the arterial walls with the progress of age.

The point needs to be pressed no further; the velocity of the pulse-wave increases with age, in conse-

*See New York Medical Journal, February, 1878 and July, 1878.

quence of the progressive stiffening of the arteries as an effect of advancing years.

PROPOSITION II.—Arteries stiffened by atheromatous and calcareous degeneration give a rapid pulse-wave velocity.

PROPOSITION III.—The velocity of the pulse-wave is directly proportional to the stiffness of the arterial walls.

PROPOSITION IV.—Variation of the pulse-wave velocity as the result of variation of blood-pressure is

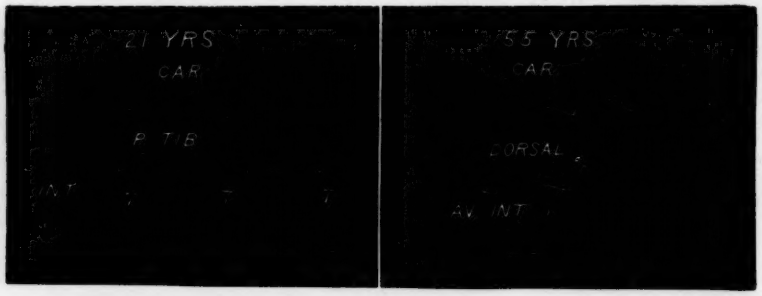

FIG. 28, 29.

We have before published a case[1] in which the arteries were greatly hardened by degeneration, as found post mortem, and in which the carotid-radial interval was measured at $^1/_{30}$ second.

Fig. 30 is from a woman aged 65 years, who had a

Fig. 30.

basic systolic murmur and a very rigid, knobby, radial artery, that felt like a cord high up in the arm; and who subsequently died from cerebral apoplexy, the result, undoubtedly, of rupture of a degenerated intra-cranial artery. In these traces the carotid-radial interval measures $^1/_{21}$ second.

not easily made manifest.

For purposes of comparison the general blood-pressure may be reduced by bleeding, by the hot bath, by nitrite of amyl, etc., and is found reduced in adynamia, and increased notably in Bright's disease. We instance here, first, the hot-bath experiment.

Fig. 31 shows tracings of the right carotid and left radial pulses from a man aged 30 years, taken just before the bath, and then while in the bath after marked modification in the circulation had been effected.

Fig. 31.

These cases and intervals demonstrate the rapidity of pulse-wave transmission along pathologically hardened arteries; and, in connection with the foregoing facts, afford ample proof of the following proposition:

Notwithstanding the great reduction of the blood-pressure, as indicated by the form of the traces and lower pressure, by the manometric tube, at which the radial pulse was best developed, the time intervals before and during the bath were nearly equal, averaging under the first condition about $^1/_{12}$ second, and under the last about $^1/_{13}$ second.

[1] See *New York Archives of Medicine*, October, 1882, p. 118.

It was to be expected that such depression of the blood-pressure would have signaled a corresponding slowing of the pulse-wave velocity; that it did not was probably owing to the influence of compensating conditions. Thus the arterial tube, in consequence of rapid escape of its contents through the open capillaries into the veins, would diminish the caliber, and, so contracting, thicken its walls. These changes would expedite the transmission of the pulse-wave, and in the case shown more than neutralize the impeding effect of the lowered blood-pressure.

Fig. 32.

Our next illustration is from a well-grown boy, aged 17 years, suffering from severe and protracted typhoid fever complicated with mitral insufficiency. The traces shown (Fig. 32) of the carotid and radial pulses were taken on the thirty-sixth day, when adynamia was well pronounced, temperature 101°, and pulse to the fingers, frequent, small and very compressible. It will be observed that the average time interval—$^1/_{15}$ second—corresponds closely with normal showings, notwithstanding the evident low-blood pressure under which the experiment was made.

The default in this case we would explain as in the last; only the retarding effect of the extremely low blood-pressure would be counterbalanced by the accelerating effect of arterial tubes contracted to adapt themselves to contents lessened by general anæmia as well as free capillary passage, to say nothing of the inadequate arterial supply as an effect of the mitral regurgitation present in the case.

Our third illustration is furnished by the influence of nitrite of amyl on pulse transmission.

Fig. 33 is from the same man, who gave the traces (Fig. 31) of the hot bath experiment. In this instance his left carotid and right radial were taken, it being observed that his right radial was more superficial and gave a better trace than the left. When all was ready his standard was first traced, as shown in the first part of the figure, then the slide was halted, the explorers being kept in their positions and the amyl inhaled until its peculiar effects were manifest, when the slide was started again and the experiment finished.

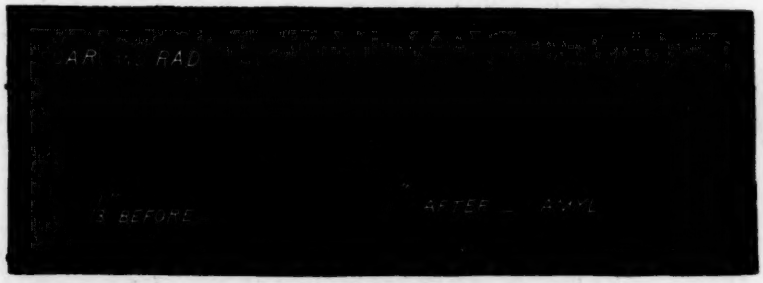

Fig. 33.

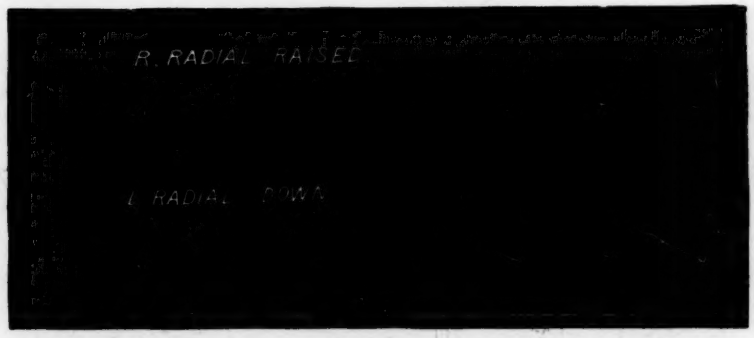

Fig. 34.

The carotid-radial interval measures from $^1/_{14}$ to $^1/_{13}$ second before, and about $^1/_{11}$ second after the inhalation.

In this experiment vaso-motor paralysis would dominate all other modifying factors, joining its re-

tarding force to that of induced lowered blood-pressure, and antagonizing reduction of arterial caliber, and so obviating or diminishing the speeding effect that would otherwise ensue therefrom.

Continuing our researches on the influence of different blood pressures, we will next study the effect of variation produced in certain arteries. The blood pressure in the arteries of a limb is markedly depressed by elevation, and elevated by depression of the limb. Accordingly if the two radials, which normally are synchronous at the same level, are traced with one arm considerably higher than the other, the result will be instructive as to the influence on pulse transmission of a suddenly lowered blood-pressure. Or the same end may be accomplished by tracing a carotid and radial with the radial first depressed and then elevated, and afterward comparing the intervals before and during the elevation of the arm.

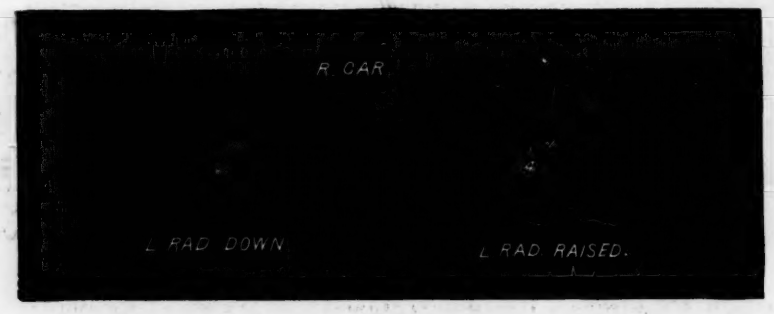

FIG. 35.

The experiment by one or the other method we have performed many times, and usually with more or less retardation of the elevated pulse, but sometimes without any difference. Figures 34 and 35 taken from different persons and by the two methods mentioned, exemplify very common phases of result.

The fact that the delay is often small and sometimes fails to manifest under conditions of such revulsion of blood-pressure leads us to seek, and, we believe, to find the explanation of the variable effect of the experiment in behavior of the arterial coats. When delay is great the coats are left relaxed after retreat of the blood; on the contrary when the delay is slight or *nil*, the coats contract as the contents depart.

The change from standing to lying with trunk and head horizontal and lower limbs highly elevated, must cause a very considerable augmentation of blood-pressure in the arteries of the upper extremities.

Figure 36 is an example of the carotid and radial traced under these opposite conditions.

FIG. 36.

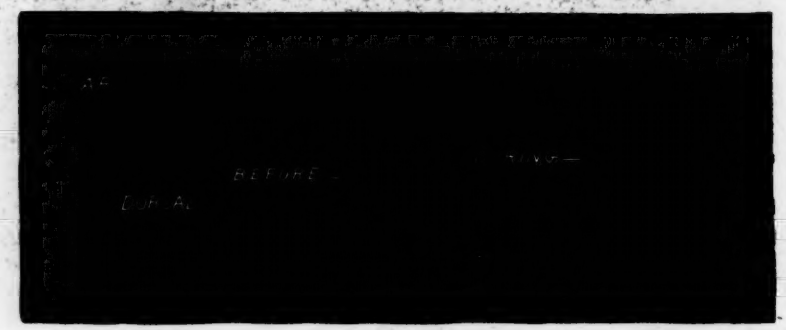

FIG. 37.

The intervals are $^1/_{12}$ second standing and $^1/_{10}$ second lying. So we have here the paradoxical result of a slower pulse-wave velocity following directly upon increase of blood-pressure. Can we explain the phenomenon? The speeding influence of increased pres-

sure is antagonized by the slowing influence of enlarged tubes and walls made thinner and more elastic by distension. We may suppose that arterial tone is a somewhat variable entity, as stimulated by interior pressure; in one instance permitting the fibers to relax to an extent, softening the walls; in another tightening the fibers, stiffening the walls.

"The effort," by which is meant making a strong expiratory effort with the glottis closed, compresses the aorta and thoracic and abdominal viscera, driving the blood into the arteries of the extremities, raising their blood-pressure in a marked degree. We have often made the experiment for testing the rate of pulse transmission before and during the effort, and almost invariably with the result of proving a swifter transmission during the effort.

Fig. 37 is a fair example of result in this experiment in which the carotid and dorsalis pedis were traced.

Intervals about $^1/_{10}$ second before and $^1/_{14}$ second during.

Sudden compression of the femorals is another means of augmenting the pressure in the arteries of an upper extremity.

Fig. 38 is from a boy, aged nine years, the same that produced Fig. 27, taken before and during compression of femorals.

FIG. 38.

Traces already produced afford abundant evidence of this incessant oscillation of pulse-wave velocity. A critical measurement of the successive time-differences in the figures will prove a slight variation between most of them, and between some a difference quite marked. For illustration, we refer to Fig. 27, where the carotid-posterior tibial interval in successive pulsations, quite uniform, changes from $^1/_6$ to $^1/_7$ second; also we produce a new illustration:

Fig. 39 is from the same young man who furnished Fig. 28, and both were taken on the same day. The time-differences of Fig. 28 vary but little from $^1/_7$ second throughout, while those of the present figure show considerable variation, and the average is less than $^1/_8$ second. So here are two runs of traces taken from the same arterial points of the same subject, under similar conditions, and the time intervals in one averaging $^1/_7$, and in the other less than $^1/_8$, second.

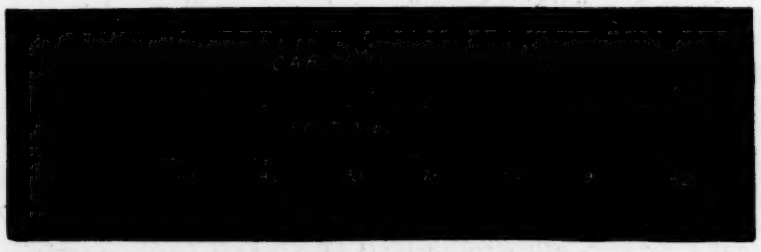

Fig. 39.

Carotid-radial interval $^1/_{14}$ second before and $^1/_{18}$ second during.

In explanation of the result in the last two experiments we only remark that the modifying forces were so acting as to throw the balance on the side of pulse-wave acceleration.

It is not deemed necessary to produce other experiments in illustration of the proposition before us. All the experiments go to demonstrate the inefficiency and uncertainty of variation of blood-pressure as a direct modifyer of pulse wave velocity. Indeed, in view of the results obtained, it may fairly be questioned whether variation of blood-pressure acts at all except as it influences arterial elasticity. We have seen, how, in experiments with inert tubes, increased pressure produced no increase of wave velocity until tubes were employed whose walls were as lax or laxer than those of living arteries. And we have just seen how in experiments on living arteries no certain acceleration follows increase, or retardation decrease of blood-pressure. Such a result both on the schema and man was unexpected, nevertheless the logic of facts must be accepted.

PROPOSITION V.—The velocity of the pulse-wave varies without notable change of the conditions.

Further, we carefully measured each time-interval of Fig. 39, and marked the result in the fractions on the slide. The measurements, converted into decimals, read in order, .125, .117, .122, .117, .131, .122, .111, and .117, second; which gives an average of .120 second. Besides, on another slide, with traces taken from the same individual some

months previous, the time-differences vary around $^1/_6$ second.

If it be thought that these variations may be results merely of instrumental and mensural errors, we reply that this is impossible. In the method employed it has been proved that the range of instrumental error is so small that it may be neglected, and possible errors of measurement are insignificant, compared with these differences. Again, when we measure successive intervals between waves in inert tubes, the fractions obtained are remarkably uniform. Thus in Fig. 3, the formula of measurement runs without material variation—$^5/_{24}$ of $^2/_5 = ^1/_{12}$ second; and if it be found that the numerator varies from 5, it will also be found that the denominator correspondingly varies from 24.

Another point is, that in the repetitions with the same tube, under the same conditions, the intervals were always the same, while in repetitions with the same individual, under apparently the same conditions, the intervals are often unequal.

Then we deem it sufficiently demonstrated that the variations in question have a real existence.

One theory alone can be offered in explanation of these variations, viz., that the state of contraction of the arterial fibers varies at short intervals, and, so hardening or softening the arterial tubes, causes the pulse-wave to travel with swifter or slower velocity. No other modifying factor can be invoked, and variation of arterial elasticity we have seen is a certain and potent modifyer; moreover, there can be no hesitation in accepting as a physiological fact such implied variation of arterial tone. In a word, under the conditions named, the velocity of the pulse-wave varies in consequence of variations of arterial tone; increase of tone causing increase, and decrease of tone, decrease of velocity.

PROPOSITION VI.—The pulse-wave velocity is not modified by variations of pulse frequency. This fact has been sufficiently illustrated by results already produced. Instance Figures 31 and 32, in which, notwithstanding marked increase of frequency of the pulsations, the time-intervals remained at normal values.

Indeed, the proposition would be sustained by considering, first, that the artery starts to rise from the same status at each pulsation, whether the intervals between the waves be long or short; and, second, that quickness of pulse, which usually accompanies frequency, can have no influence upon pulse transmission, since it has been demonstrated that a quick wave and a slow wave travel along the same elastic tube at the same rate of speed.

PROPOSITION VII.—The velocity of the pulse-wave is different for different arterial tracts. This proposition has already been well established, and for its illustration here we reproduce a figure previously published,[1] which gives the result of an experiment, in which the pulsation of the heart, carotid, femoral, radial, and posterior tibial, arteries, and the time in fifths of seconds, were traced simultaneously.

This experiment, so prolific in facts, gives the following results regarding the pulse transmissions along different routes: Carotid-femoral time, .0797″, which, with a distance of 18 inches, gives a pulse velocity of 226 inches per second. Carotid-radial time, .0797″, which, with 23 in. distance, gives a pulse velocity of 288 in. per second. Femoral-posterior tibiai time, .0606″, which, with 33 in. distance, gives a pulse velocity of 544 in. per second.[2]

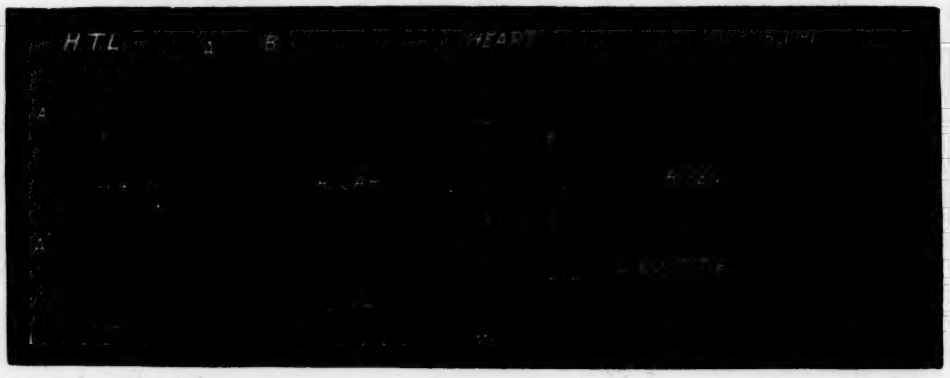

FIG. 40.

Thus it is well shown how the rate of pulse transmission varies in value along these different lines, and now the problem as to the cause of these differences presents for solution. Pertaining to the arteries there are four points of difference in condition, viz: (1) difference as to giving off of branches; (2) distance from the heart; (3) state of elasticity; and, (4) size. The question as to any modifying influence of the first two has been settled in the negative by our results with tubes. As to the third, it is a well-known fact that the aorta is highly elastic; its coats are thick, yet extremely soft and pliable, and yield with the greatest readiness to increase of interior pressure, to promptly return when the pressure diminishes. The aorta, it is safe to say, is more exquisitely elastic than the arterial trunks of the ex-

[1] New York Archives of Medicine, June, 1882, p. 231.

[2] The cardio-arterial intervals are expresssed on the cut, and the arterial intervals are obtained by deducting the lesser cardio-arterial from the greater; thus, cardio-femoral interval .1666″—cardio-carotid .0869″, gives .0797″ as the carotid-femoral interval, and so on for the other arterial intervals.

tremities, and to this difference in elasticity we are led to attribute in part the comparative slowness of aortic pulse transmission. And in regard to the small but real difference of rate between the upper and lower extremities, an assumed greater resistance in the arteries of the lower is the only explanation that offers of the faster transmission in the latter.

Difference in size of the arteries is in reality the potent factor which makes the pulse travel slower along the aorta than along the other arteries. This conclusion is inevitable when we remember the law that wave-velocity is proportional inversely to the size of the tube traversed, and the fact that the aorta is many times larger than the arteries of the limbs.

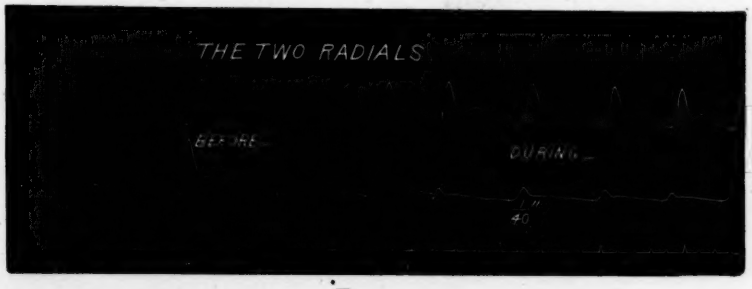

FIG. 41.

PROPOSITION VIII.—The time of appearance of the pulse-wave is delayed in arteries in which the blood column has been much reduced by obstruction of the current.

The experiment upon which this proposition depends for proof is readily made on man by tracing the two radials before and during compression of one axillary or brachial; or by tracing the two posterior tibials or dorsals before and during compression of one femoral or popliteal; or again, the method may be pursued of tracing a near and more distant arterial point, as the carotid and radial, before and during compression of an intermediate point, as the axillary or brachial.

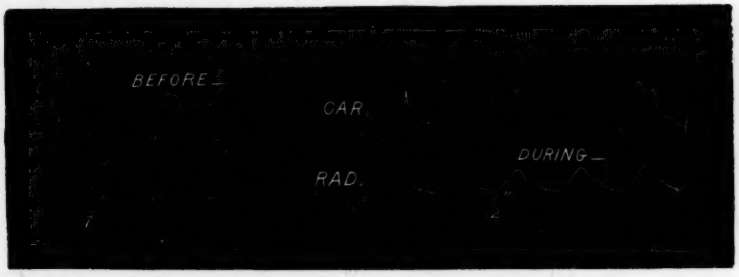

FIG. 42.

Figures 41 and 42 are examples of results from such experiments on two individuals of different ages. The delay in either occasioned by the obstruction is about $\frac{1}{40}$ second.

In explanation of pulse delay from this cause, from our experiments on tubes, we need take no other account than that of check at the site of obstruction. The condition of the artery below, if contracted and diminished in size (which is probably the case), would only tend to lessen the delay.

PROPOSITION IX.—The velocity of the pulse-wave is diminished in arterial trunks affected with vaso-motor paralysis.

This proposition is a necessary corollary of facts already acquired. In vaso-motor paralysis the arterial coats are relaxed and the arterial caliber enlarged, both of which conditions are effective factors of pulse retardation. Besides, we have published a case[1] with tracings in which the phenomena of general vaso-motor paralysis were well declared, with coincident remarkably slow pulse transmission.

PROPOSITION X.—The time of appearance of the distal pulse is delayed in aneurisms with yielding walls and free communication with the artery; while there is no delay in aneurisms with resisting walls, even though freely communicating, unless the aneurisms directly obstruct the arterial current, or diminish wave velocity by producing vaso-motor paralysis.

The clinical proofs of this compound proposition have been well furnished by François-Franck[1] and the author,[2] whose publications contain graphic illustrations of the points from actual cases.

From this study we deduce the following resumé of the more prominent facts:

1. The velocity of the pulse-wave is determined above all by inherent states of arterial elasticity; being slower as the arteries are more elastic.

2. It is incessantly changing, within small limits, in consequence of variation of arterial tone; being faster as the tone is higher.

3. It diminishes with the size of the artery traversed.

4. It tends to increase with increase of arterial pressure, but modification from variation of pressure often fails to manifest.

[1] New York *Medical Record*, Nov. 29, 1879.

[1] *Journ. de l'anat. et de la physiol*—t. xiv (Mars-Avril, 1878), et t. xv (1879).

[2] *N. Y. Med. Record*, Nov. 29, 1879.

5. It is not perceptibly modified below the site of an arterial obstruction, but the distal wave is delayed there in consequence of check at the site of obstruction.

6. It is not perceptibly modified in an artery below the site of an aneurism, although the distal wave may be delayed there in consequence of absorption by the yielding aneurismal walls.

THE EMINENT DOMAIN OF SANITARY SCIENCE, AND THE USEFULNESS OF STATE BOARDS OF HEALTH IN GUARDING THE PUBLIC WELFARE.

BY JAMES E. REEVES, M.D., SECRETARY OF THE STATE BOARD OF HEALTH OF WEST VIRGINIA.

[Read before the American Public Health Association at its annual meeting held at Detroit November 14, 1883.]

MR. PRESIDENT:—I propose a few inquiries into the truth of a proposition which I consider vitally important not only to the State, but to the general interest of every social institution. The proposition to which I allude may, with some convenience, perhaps, be expressed in the following terms:

Without obedience to the laws of health, it is impossible to secure the highest culture of the citizen—physical, moral and intellectual—and perpetuate the prosperity, freedom, and glory of the State.

Should I succeed in establishing the truth of this proposition, the labor of sanitarians will be more justly appreciated, as well as the immense agency exerted by State Boards of Health amid the restless activity and excitements of the social and political elements of our advancing and complex civilization.

The principles of sanitary science are not of modern origin. Indeed, they are as old as the Mosaic code, and their unerring rewards and penalties have marked the life-history of all the nations that have covered the earth. In their scope, they are wide enough to embrace all humanity, and just as applicable to communities of to-day as they were to the Jewish race thousands of years ago.

It may be truthfully said that the business of sanitary science begins and ends with man; but language has no single or compound word which fully expresses its varied relations—its social forces and necessities to human life and human society. Its aim is the growth of an improved race—a healthy life—a useful life—a happy life—and as long a life as possible. Commencing with utero-gestation, it compasses birth, infancy, childhood, adolescence, puberty, adult life, maturity; thence along the declivity to old age, and to death! Every influence of food and drinks, clothing, exercise, education, soil, and climate, comes within its purview. Good health, therefore, embraces *value* in the broadest sense of that term. On the individual it confers happiness, dignity, and a thousand advantages in the struggle of life. To the State it gives wealth, power and freedom.

Public health ever goes hand in hand with true liberty, and is the companion of orderly habits and pure morals. During the fourteenth century, when vice and misrule in Europe had their greatest sway, and the beautiful fruits of civilization were trampled under foot by barbarian warriors; when acquisitions that had cost mankind ages of toil and millions of money were lost in the general wreck; when the night of igorance was darkest, and human degradation sunk to the lowest depths—then hygiene was neglected, and plagues numerous and almost universal rested upon the people.

But this is only one of the many examples that could be adduced in proof that general health and longevity are inconsistent with ignorance and slavery. Greece, with the loss of her liberty and the ruin of her cities, has an altered climate, dating back, perhaps, from the years of the Peloponesian war—more than four hundred years before the Christian era—when polished and populous Athens was devastated by fire and sword, and plagues followed in the train to complete the horrors of her lamentable desolation and downfall!

In London, about the middle of the sixteenth century, the population was estimated at half a million, and the average duration of life was only twenty-five years—*eighty* dying annually out of every thousand of the population. The streets were narrow, scarcely paved, and equaled the imperfectly constructed sewers as receptacles of all manner of abominable filth; the dwellings, principally of wood, were overcrowded, and no attention whatever was paid to their ventilation; water was scantily supplied; personal and domicillary cleanliness were neither encouraged nor enforced; and the city was given up to licentiousness. Then, in 1665, London was visited by plague, and it is recorded that in one night three thousand persons perished from that terrible disease; and that up to 1679 the mortality from that source alone amounted to one hundred thousand! But now, with its improved sanitation, its stupendous sewers which have been recently completed at a cost of twenty millions of dollars, and its population increased to millions, how different the result! Instead of twenty-five years, the average duration of life is above thirty-seven years, and the rate of mortality, instead of fifty, is a fraction less than twenty-four in a thousand of the population.

Calcutta, built on a swamp on the east side of the Hoogly, and, at a few miles distance, surrounded by lakes which are supplied from overflows of the river, by a proper system of drainage of that part of the city inhabited by Europeans, has become as healthy as any country of the same latitude on earth; while, on the contrary, Stockholm, built on small islands at the entrance of Lake Malar, with a mean annual temperature of 40° F., and possessing the requisite natural advantages, if properly guarded and improved, to make it one of the healthiest cities in Europe, is, because of gross disregard of sanitary laws—imperfect drainage and a bad supply of water in houses—one of the *unhealthiest* in that quarter of the globe, as shown by the death-rate.

Sanitary science, therefore, is a segment of political economy, and should receive encouragement by the State as a wealth-creating factor—riches, indeed, to the whole people far above that of any other earthly value.

It has become a classic saying that "public health is public wealth;" but who can estimate it rightly? Every case of sickness and the loss of every life from preventable disease is a tax upon the material wealth of the State and a great sorrow to the family. Count the number of deaths in a community for any given period, multiply it by *thirteen*—the estimated number of sick on hand for each death—and you have the average total of sick persons cared for at an expense much greater than would have been necessary for their support in health. In addition to this estimate, let us remember that at least *one third* of all the cases of sickness and of the deaths that occur are preventable; that this suffering and continuing tax on health and life is in direct antagonism to industry and the general prosperity; that the visitation of diseases falls heaviest always on the poor and most helpless classes of the community; and that the pressure of bad health and poverty, with their far-reaching ill effects upon the growing and reproductive parts of the population, tends to deterioration of the race.

In times of epidemic visitation, all these ill influences culminate in general distress of the people. Let Asiatic cholera come, smiting the young and the old, withering the pride of manhood and the beauty of youth—in many sections marring, in others obliterating the festivities and gayeties of life, robing the social circle and the family group in the garments of grief, spreading the gloom and striking the panic of sudden death—then, for the time, possibly, the value of public health, as well as legal statutes to protect it, will be justly appreciated; for, besides the general affliction from sickness and death, the direct loss in money would probably equal in amount, during the time, the whole expenditures of the national government.

Political economists have said that the cash value of the life of an able-bodied, industrious man is sixteen hundred dollars, and that the average value of men, women, and adolescents of both sexes above twelve years of age, is one thousand dollars. Now, accepting this estimate as a fair and proper basis for calculation of the wealth stored up in the United States, we may have some conception of the real value of the earnings of the *human machine*.

Besides native wealth, our country is enriched annually from immigration. Every steamer that plows its way to our shores comes freighted with human souls, to swell the population of this country and enlarge the profits of labor. No migration of men has occurred in the world at all similar to that which has been pouring itself upon the shores of the United States for the past five years. In a single week we have again and again received into the bosom of society numbers as great as a Gothic army possessed in its ranks, and passed them away without hurt and without terror. Week after week, again and again they come—each vessel bringing frequently a thousand souls, a number greater than was borne by a fleet of many ships in the days when Greece invaded Ilium, or Xerxes, Greece.

The question of immigration is, therefore, one of grave importance to American statesmen. It involves political, moral, and social consequences of a magnitude too vast for common apprehension. Who shall assume to tell what precise result will follow in this country from the bringing together of races of men hitherto comparatively isolated? Or who shall say whether the intellectual and physical power of the Anglo-Saxon, the cool and industrious vigor of the Teuton, or the elasticity and fire of the Celt, shall be the controlling influence in the coming time? That the inferior must recede or disappear before the superior races is an inevitable result, sanctioned alike by reason, analogy, and the indisputable records of history. Nature's leaves, wherever civilization and science have unfolded them, bear the plain evidences that such has been the eternal course of her wise, although sometimes inscrutable, laws.

Let us hope that from the fusion of all these different families and different bloods there shall spring a composite race of men of far greater capacity than those who at present govern the nation—a race which shall have no jarring prejudices, and be animated by only the loftiest sentiments for the common welfare.

It is computed that by immigration our country is annually enriched $50,000,000, and with net profits of labor amounting to $65,000,000. The great Northwest is receiving the larger share of this wealth; but along with it there are some threatenings and dangers which well deserve wise attention. The immigrant brings with him not only his money, but also his habits of life and heredity. These may either be very good or very bad. If the former, then his citizenship is a substantial acquisition to the wealth of the state. If the latter, he is at once both a moral and physical leper, and of incalculable danger to society. Fortunately, however, thus far the assimilative and moral forces of our American institutions have been sufficiently active to absorb this immense immigrant mass, and convert it into strength of the nation.

But notwithstanding the seeming capability of our institutions to swallow up, easily digest, and assimilate the stream of humanity which is constantly pouring into this country from the Old World, we must not shut our eyes against the manifest and increasing tendency of this commingling of moral and social habits to greater latitude and excesses than are to be found in either of the parent countries. In other words, the demand for labor of every character, its handsome rewards, and the plenty of money, are powerful temptations to influence a departure from simple and correct habits of life, with their almost never-failing accompaniment of good health.

The popularity of the milder alcoholic beverages—ale, beer and wine—is directly due to the influence of our adopted fellow-citizens in all classes of society. I should be untrue to myself, to my position, to the medical profession, and to humanity, if I let this opportunity pass without sounding a note of warning against the intemperate use of alcoholic drinks, and to speak of their influence to debase the citizen and his progeny—physically, morally and mentally—and deny him and them good health and longevity.

The connection between drunkenness and crime, and between drunkenness and poverty, is close and unvarying in its effect upon society. The remarkable

increase of insanity in recent years may, in part, be traced to the prevalence of the intemperate use of intoxicating liquors. That wine, beer, and the stronger beverages, when taken in excess, all tend to derange the mental manifestations, is a fact too familiar to medical men to require of me argument to prove its truth. They act upon and disorder the brain more directly, perhaps, than any other organ; and, by habitual excess, may at last induce permanent impairment of the mental faculties.

In times of epidemic visitation—when pestilence is sweeping the country—the intemperate and the drunkard are the first to fall by its arrows of death; and the chances of recovery from any disease or injury whatever are infinitely less for the drunkard than for the sober man. Were man to live as he should do—*enjoying* every good gift and *abusing none*—he would (saving accidents) live to extreme old age without disease. But alas! how many such careful, prudent, temperate lives could there to-day be found in this great country of ours, where a kind Providence has made it possible for us to enjoy every blessing the whole world can afford? The denunciation by the prophet Isaiah—"*Woe to the drunkards.*" "*Woe to them that are mighty to drink wine*"—is not only in course of fulfillment every day with the drunkard, but the *curse* extends to his children yet unborn, even to the third and fourth generation, by inheritance of appetites which are far more constant and certain in their descent than patrimony.

It has been asserted that at least seven-tenths of all the crimes and poverty and calamity to the people of the United States sprang from the abuse of personal liberty in the use of spirituous, vinous and malt liquors; and, if the charge be true—either in whole or in part—it is a subject which should concern sanitarians. Vice needs every possible exposure and discouragement to prevent its seeds from growth, and the lesson should everywhere be taught that good health and long life cannot dwell in association with a poisoned mind or an upbraiding conscience.

The public-school system of the United States is the great national laboratory for shaping, refining, and directing, on a progressively higher intellectual, moral and social plane, the tendencies of American citizenship. Into its plastic mold the children from immigrant families are freely mingled with native English-speaking youth; the lessons there taught and the manners prescribed and enforced are carried to the homes of the children in every class of society to cultivate and ennoble the aspirations of parents and guardians, and combat immoral and debasiug influences which have crept into our civilization.

In the American public school system, therefore, are centered the greatest trusts and the brightest hopes for the future of the republic. It is the nursery of statesmen, philosophers, scientists, and patriots; and, being invested with such a high and mighty alliance of interests, it has become the particular care of sanitarians as the vineyard for the nurture and growth of a healthy race of men and women who shall lead the whole world in civilization. How important, then, that guardians, principals and teachers in our common schools shall be thoroughly qualified, by special training in physiology[1] and hygeine, for the discharge of the high responsibilities with which they have been clothed by the community and the State!

If the opportunity of the school-room for the dissemination of the principles of sanitary science were properly appreciated and diligently improved by teachers, it would soon come to pass that all classes of the people would pay respect and render obedience to its laws. Physiology and hygiene should receive far more attention than is now usually given these studies. At present, in many schools, they are treated as if they belonged to the *ornamental branches* of education rather than the *useful*, and are taught by *title* instead of by direct practical examples gathered from the every-day life of school-children.

In country districts school life has many more exposures to unhealthy influences than are suffered in towns and cities. For example, it is no uncommon experience for some of the children to walk two or three miles—sometimes double that distance—every day they attend school; and when the weather is wet and the roads muddy, they are frequently compelled to enter their classes with cold feet and damp clothing, and remain in that chilly, uncomfortable condition until the period of recess arrives, or, may be, until their return home in the evening. In winter time, when the roads are icy and slippery, or when the ground is covered with snow, and travel on foot most disagreeable and fatiguing, those who have long distances to walk must hurry their footsteps to escape being tardy at roll-call, and when entering their classes are all aglow and perspiring. In that condition they take their seats, soon feel chilly and are too sleepy and stupid to take interest in the lessons. At noon, when the hour for dinner arrives they eat hurriedly the cold food contained in their little baskets and buckets, but not usually with as sharp appetite and good digestion as when they are at home. Immediately after dinner they engage too vigorously in all sorts of play—running, jumping, "chasing the fox," base ball, and various other fatiguing and relaxing exercises—so that by the time of the call "to books," they are as tired and indisposed to study as when they reached school in the morning. Then after dismissal in the evening they are again tired out by the walk home, and thus they are more or less exposed to unhealthy influences every day during the school term.

The management of country schools should provide special accommodations for the relief and comfort of children who come with damp clothing and wet feet. This can be easily accomplished in a well appointed reception room for each sex, where should be kept always on hand and ready for use a sufficient number of pairs of shoes and stockings of different sizes, also several warm wraps with which to clothe and warm the tenderest of the exposed pupils until their own shoes and stockings and other garments are dry enough to put on, and they are ready to enter their classes.

[1] Dunglison's "School Physiology" is admirably suited for use in public schools, and is, probably, the best of its class.

Parents who are able to do so should be encouraged to supply the school store room with an extra suit of clothing for each child they send, and, no doubt, in every community there could be gathered enough subscriptions of that kind from humane, well-to-do persons and families to meet the wants and needs of the poorer children at school whose wardrobes are already too scantily supplied to afford them comfort and proper protection in cold weather. Nowadays, however, rubber shoes, "gossamer" circulars, and gum coats have become so cheap and common it would seem that even the poorest families should be able to provide such articles of protection for their children.

To perfect the system I have indicated for guarding the health of school-children, and at the same time to cultivate a spirit of benevolence, there should be appointed by the principal or teacher, at the beginning of each quarter, a special committee—to be known as the *Health-Saving Service*—composed of both boys and girls selected from the older and more advanced pupils, and charged with the responsible duty of looking every day after the welfare and comfort of those who need assistance, particularly the little ones. At the close of each week this committee should be required to make formal report of its labors to the teacher or principal, naming the pupils relieved and the particular service rendered in each case. Then, at the end of the school term a handsome premium should be awarded to the pupil who has taken greatest interest in the work, or performed the largest number of acts of assistance.

All examples of exposure of health during school life should be seized by teachers and made the texts of little lectures on the principles of personal, domiciliary, and public hygiene. They should point to the danger to health from wet and cold feet, too violent exercise, sitting on the ground or in draughts when the body is warm and perspiring, excessive indulgence in eating and drinking, insufficient or improper clothing, breathing a bad atmosphere in crowded rooms—all these and every other like impropriety or transgression of the laws of health should be made as plain as simple language and apt illustration can portray them.

It should be impressed upon the attention of school-children that the diseases which kill them in the greatest numbers have been classed by wise men as FILTH DISEASES; that small-pox is easily preventable by vaccination; that scarlet fever, diphtheria, typhoid fever, yellow fever, cholera, and even pulmonary consumption, are preventable by cleanliness and correct habits of life; that there are farm-houses in all parts of the country, groups of houses in every community, whole villages, sections of towns, and districts in cities, where slovenliness and filth so much abound that sickness in some form is present at all seasons of the year; that filth does not only infect the atmosphere immediately surrounding its accumulation, but can and does transmit its germs afar; and thus it has again and again happened that whole families, with every apparent surrounding of cleanliness, comfort, and luxury, have sickened and died from infection received through the channel of some drain-inlet, or the medium of the common water-supply.

The more surely to fix the memory of these truths, the teacher should employ illustration on the blackboard to show dangerous proximity of the family residence, the stable and barn-yard, the pig-sty, the duck-pond, the privy-vault, and the kitchen sink-drain, to the water-supply in the well or cistern. He should also tell how the atmosphere in the house may become poisoned and breed disease from decaying vegetables stored in the cellar; how the milk supply of the family may become contaminated with filth and dangerous to drink; how dwelling-houses, work-shops, and factories should be constructed to be healthy to live in and occupy; and how necessary, for the maintenance of good health, that they breathe fresh air, drink pure water, and have plenty of well-cooked, wholesome food.

Besides examples drawn from village and country life, the teacher in the city school may show, by diagrams on the blackboard, the system of sewerage usually adopted in towns and cities; the importance of *traps* to prevent the inlet of deadly gases from the public sewers through the channel of the kitchen-sink waste-pipe, the soil-pipe of the water-closet, and the overflow-pipe of the bed-room stationary wash-stand; the great danger to health from imperfect ventilation of dwelling-houses, school-rooms, theaters, churches, and public halls; the manner of the water-supply; the danger from open cess-pools; the necessity of guarding the public markets and green-groceries, to prevent the sale of tainted meats, stale vegetables, and decaying fruits; and not the least to be dreaded and shunned—public funerals from infectious and contagious diseases.

In the city there are also every-day opportunities to "point a moral" from drunkenness, and from police arrests for various offenses which disturb the peace and good order of society. Such examples should be used to show the penalties and hardships of vice, in contrast with the honorable and lasting rewards of a temperate, virtuous life. To encourage morality and the growth of true manhood, the lives of good men, in contrast with the character of bad men, should be presented for study. For example, liberty-loving Lafayette should be contrasted with that "great bad man," Mirabeau, his fellow-countryman, who had a mind of the highest order, and eloquence the most commanding and impressive, but his commentary on national liberty was personal licentiousness. A look into American history and biography will find the experience of Jefferson in proof that habits of temperance win long life and good health. Then, in English history, it may be seen that Sheridan, with all his oratory and wit, became an outcast from society—a drunken, fallen man. And Savage, and Burns, and Byron—had they not neglected and scorned the plain precepts of temperance, morality would then have had less cause to disclaim the alliance of genius; nor would vice be so readily heard uttering the base maxim that stormy passions are the necessary accompaniments of lofty intellect.

The State has made abundant provision by statute law for the intellectual training of its youth. Why not, at least, equal concern for their physical culture

and development — *mens sana in corpore sano.*

Lord Stanley declared that "sanitary studies belong to the patriot no less than the philanthropist. Don't fancy," said he, "that the mischief done by disease spreading in the community is to be measured by the number of deaths which ensue—that is the least part of the result, as, in the battle, the killed bear but a small proportion to the wounded. It is not merely by the crowded hospitals, the frequent funerals, the destitution of families, or the increased pressure of the public burdens, that you may test the sufferings of a nation over which sickness has passed; the real and lasting injury lies in the deterioration of race, in the seeds of disease transmitted to future generations, in the degeneracy and decay which are never detected till the evil is irreparable."

Lord Beaconsfield also was an active patron of sanitary science, and uttered the sentiment that "the health of the people is the first care of statesmen." Indeed, its objects rank among the most important matters now discussed by the highest intellects and most humane hearts in every civilized country. No jurist questions the right and duty of government to make and enforce laws for the protection of the public health, to secure not only as long a life as nature can give, but likewise as healthy and happy a life as possible.

The State erects imposing and costly edifices for the detention and punishment of criminals, for the education and care of the blind and deaf, and for the treatment of the insane. To support such establishments, with all their necessary appointments, hundreds of thousands of dollars are annually paid out of the public treasury, and the burden of taxation for that purpose is constantly increasing. Why not enact statutes to diminish the factors which furnish such charges to the State?

The law is singularly inconsistent in its protection and punishments. If a man commit murder, he may either be hanged or sent to the State prison for life; but preventable disease—scarlet fever, diphtheria, typhoid fever, small-pox, and other death-dealing agencies—may stealthily enter the household, kill the family, and be innocently regarded as an act of Divine Providence!

The poor pilferer in a dwelling house at midnight may be in a state of starvation at the time he lays a trembling finger on something to eat in the larder, or on a silver waiter on the side-board, but, notwithstanding the pressure and desperation of hunger, if discovered in his trespass and theft, he is sent to prison, and his family disgraced thereby; while the architect, the plumber, and, alike, the ignorant doctor, may enter in broad daylight—aye, even by *call*—and steal and destroy the life and health of the occupants.

The law makes common carriers responsible, regardless of accident, for damage done either to person or property; yet an American citizen may refuse the protection which vaccination affords against small-pox, carry that loathsome disease into a community, and start an epidemic.

If a pitfall be left in the street or public highway, and the citizen, his horse, or his ox, fall into it and is injured in any manner thereby, he may sue in a court of justice and recover from the town, city, or county, as the case may be, a sufficient sum of money to compensate for the damage sustained; but the same citizen may sicken and disable his own family, also the family of his neighbor, by accumulations of filth on his premises, and escape all legal responsibility.

Again, municipal ordinance says that, in order to avoid injury to persons and property, a locomotive engine and train of cars shall not exceed a speed of six miles per hour within the corporate limits; yet the same authority of law permits open cesspools, filthy streets and alleys, a contaminated water-supply to families, and the constant breeding of infectious and contagious diseases to kill the people.

And again, to prevent litigation and strife among her citizens, the State has even gone so far as to prescribe the very words to be used in the purchase or transfer of property by "Richard Roe" or "John Doe." Why not the same particularity and care to prevent the rise and spread of sickness among the people?

Influenced by progressive minds in the medical profession, twenty-nine States have established State boards of health, and it is surely within the bounds of truth to affirm that thereby thousands of valuable lives have been saved, also hundreds of thousands of dollars to the wealth of the States.

The American Public Health Association, backed as it is by the influence and support of the whole medical profession of the United States, is recognized as the great central agency for the dissemination of sanitary knowledge among the masses. Through its systematic efforts and wise administration of voluntary powers, a large public sentiment has already been secured in favor of health legislation; and, accordingly, it has been so done by legislators in many of the States.

I charge you, my brethren, to concentrate your energies and influence. Speak out as one man in the name of the dearest interest of God's children, who look to you—and not unavailingly—for succor in time of their distress. If the medical profession will but remain true to itself—true alike to science and humanity—the time is not far distant when its exalted influence will compel obedience of legislators to public sentiment, and cover every State with statute law for the protection of the public health. Moral suasion may do much to encourage respect for sanitary science, but it requires the strong arm of statute law, with its severe penalties for violation, to enforce obedience to its precepts.

The West Virginia statute provides that "the State Board of Health shall take cognizance of the interests of the life and health of the inhabitants of the State, and shall make, or cause to be made, sanitary investigations and inquiries respecting the causes of disease and the means of prevention." How broad the charge! and how humane and God-like the service which defends men, women and children from preventable diseases! This is precisely the service which a State Board of Health may afford—the education of the people respecting the economic and

political importance of public health; to exterminate and prevent pestilential diseases, and thus largely contribute to the general welfare.

During the last decade there has been most gratifying activity in the cultivation and diffusion of sanitary knowledge; and it is an encouraging sign of the times that so much attention is now being given by legislators to the prevention of disease as a duty of the State. The proud lead of the great Northwest States in the cultivation of sanitary science has awakened a general interest in the subject in all parts of our common country. All praise, therefore, to the industrious leaders in sanitary work in Illinois, Michigan, Wisconsin and Minnesota. Little West Virginia, nestled in the mountains, and looking into the near future for the coming time when her inexhaustible stores of native wealth shall be unlocked to hundreds of thousands of busy laborers, has proudly acknowledged allegiance to the goddess Hygeia, under whose health-inspiring banner she has already won substantial victories and benefits for the saving of her citizens. But, while flushed with the stimulus of her triumphs, she turns in sadness, and with outstretched arms and pleading voice, to her elder sisters, by whom she is immediately surrounded, Ohio, Pennsylvania, Maryland, and the dear old Mother State, and says to them, "How long, oh! how long shall the land which the Lord thy God giveth thee be the Paradise of Quacks?"

West Virginia is very proud of that feature of her State Board of Health law regulating the practice of medicine and surgery. Nothing, I am sure, could work more smoothly and consistently with the interest of the public health than its execution as a part of the duties of the Board; and I commend the example of its success to those States that have not yet taken the advanced step to secure higher medical education. This provision of the law strikes at none but those wholly incompetent to assume and discharge the sacred trust of a *physician*. Neither does it attack any so-called *school* in medicine; and the law is most reasonable and just, both to the medical profession and the general public.

From time to time laws are passed to regulate the sale of intoxicating liquors and the dispensing of poisons; to suppress lotteries and gambling houses; to prevent the carrying of concealed weapons; to restrain the sharper, the swindler, the robber, and the assassin. Why not, with like propriety, pass laws to restrain the ignorant, and the pretender in medical practice who strikes at both life and purse, who can *kill* and then invoke the power of the courts to enforce payment for his murderous service? And is it not a ridiculous contradiction to say that a street nuisance which is prejudicial to the public health shall be abated by the power of law, and then with the next breath say any man, without due qualification as a physician, may call himself "doctor" and kill his neighbor?

A lawyer, whose practice and mistakes can only affect the purse and property of his client, must undergo examination by learned judges before he can be admitted to the bar. To become a teacher in the common schools, one must pass an examination and receive a certificate of qualification before he or she can be employed. A pilot on a steamboat, before he can be admitted to the wheel, must learn every crook and bar in the channel—must know the stream so well that he can steer his craft, freighted with human life, as safely in the dark as in the light of day. But such is the inconsistency of law—such the commentary upon unlicensed personal liberty—that in many of the States any man calling himself *doctor* may swing his shingle, and, without the least restraint, prey upon the lives and property of his fellow-citizens.

The depreciated value of an American medical diploma is a reproach to the profession; and it is, therefore, high time that the conferring of degrees should be entirely divorced from the department of instruction in medical colleges. This opinion is fully warranted by my own experience as a medical examiner. Not long ago a young gentleman—a graduate of a medical college in "good standing"—came to me for registration, and, to my utter astonishment, he could not answer the question, "What is sanitary science?" Another graduate in medicine, when asked, "What is semeiology?" answered, "A description of the *spermatozoa*."

But the most shameful exhibit, involving the character of a medical college in "good standing," that has come to my knowledge, is shown in the following correspondence:

"My Dear Sir: A friend writes me that you propose attending medical lectures. I write to present the claims of ——, the medical center of the South and West—the healthiest large city in America—beyond the reach of yellow fever, etc.

"Good boarding, costing elsewhere $20 to $25, can be had here for $12 to $15 per month. Owing to our ——, railroad fare is only half rate. No school has better facilities for medical teaching than the —— Medical College. As I am allowed a certain number of beneficiaries from your State (West Virginia), I will take you as one, and charge you only $50 instead of $80. With this reduction, cheapness of board, and reduced railroad fare, you can attend one of the best schools for less money than an inferior one. Let me hear from you. Send names of other students. Yours truly, * * *"

This letter was a *tablet* copy—probably one of a hundred of the same kind sent out to catch the unwary. It came addressed (by mistake, of course) to a Wheeling physician who had already honorably finished his college course, and from him it came into my hands, as a medical college curiosity! It is without date, but its caption is freely illustrated with the name and picture of the college, and contains the names of the faculty, trustees, and "demonstrators." In order to sound the depth to which "Demonstrator" —— might be willing to descend in fishing for students, regardless of *quality* (?), a veritable medical student sent him the following letter of inquiry, with orthography and syntax specially set for the occasion:

Wheeling, W. Va., Aug. 18, 1883.

Doct——

One of mi Friends who is trying to be a Doct has got a letter from you which says your College is one

of the Best Colleges for Medical Teaching in America and that the Feas are cheaper than some other good Colleges and that sutes my circumstance for I am a very poor young man and no matter how much I may Know of Thery of Medicin I cant practice in W. Va. without a Deploma from a good College like the one you have in ——— you offerd to take mi friend for $50 dollars and you will do a poor young man a favor if you will take me at the same Rate for I have that much money I can pay you in cash as soon as I get there Mi Friend will Come with me and we can stay together at the same bording house the report is here that the yeller fever is in ——— but I am not affred of any disease for I have had the Small Pox very bad. Tell me what books I will have to studdy at your College and when me and my friend must come We come by —— I have gone through with grays anatomy and the Electric dispensary and medwifery please tell me how long I will have to stay and when I can get my Deploma and if I have to pay extra for it.

In haste Yours Respectful

————*——

And here is the prompt reply that was sent to this Wheeling student, showing that the style of his English composition was no bar to admission at ——— Medical College:

———, AUGUST 20, 1883.

Mr. ———,

MY DEAR SIR:—Your favor of the 18th to hand. I have one more special beneficiary to allow; so I will take you on the same terms as I offered your friend. Am anxious that your State should have a better representation in ——— than it has had in the past. The other information you ask is contained in the catalogue I mail herewith. If you begin your medical course this fall, you can graduate February, 1885. That is as soon as any respectable school can graduate you, unless you have already taken a course, There is no place where you can learn more medicine for the same amount of money than in ———. I came here in '77 with a very light pocketbook to study medicine, and, contrary to my expectations, I had a little left after graduating, and was given no beneficiary privilege either.

The cushioned seats for our new amphitheater have arrived from the factory. They are all numbered, so that students on matriculation reserve their seats for the ensuing session, those matriculating first having choice. If you desire a seat near the front, you had better remit me the matriculation fee ($5), leaving the balance of $45, and I will matriculate you, select the best seat possible, and mail you your matriculation ticket and number of seat, so when you arrive you will not be crowded back so far that you will be unable to see well the demonstrations and experiments.

Hoping to hear from you in a few days, I am,

Yours truly, * * *

This exhibit shows the prostitution of medical college work to base purposes at "the medical center of the South and West." I have made the blanks to hide the identity of the actors in the comedy, because this college has accepted my friend Rauch's "Minimum Requirements" for a medical college to be held in "good standing;" and, no doubt, its faculty are ready to swear by the West Virginia schedule of requirements also! So much for mere promises of reform and a higher standard!

Finally, in exerting my efforts in advocacy of the cause of sanitary progress, I should commit a serious blunder if I neglected to bespeak the assistance and co-operation of the ladies. Woman gave Massachusetts the first State Board of Health in the United States, and from that beginning—in 1869—twenty-eight States have followed the example. There is yet much work for her to do, and none can do it as well as she; and no cause possesses a stronger claim upon her sympathies and affections. As science advances, she gradually acquires her true position in the scale of social life. Of the world's inhabitants, 750,000,000 universally hold woman in a state of bondage and degradation; 250,000,000 alone allow her to approach her proper sphere by acknowledging the marriage contract, paying deference to her influence, and promoting her intellectual culture. How much had the mind of man to be cultivated before it could give expression to that sweet sentiment of Campbell! —

"And say, without our hopes, without our fears,
Without the home which plighted love endears,
Without the smile from partial beauty won,
Oh! what were man? a world without a sun."

A CASE OF PHANTOM TUMOR.

BY C. N. COOPER, M.D., BATAVIA, ILL.

Mrs. W., aged 44, and mother of four living children, consulted me about March 1, 1882, with reference to her expected confinement. She ceased menstruation the previous July, but having a slight show in September, since which time there had been no sign of menstruation. She is the subject of extreme prolapsus uteri, which for two years has caused the os to present at the vulva whenever she is upon her feet for a considerable time. This condition still exists. Mrs. W. is confident that she is pregnant, for she has felt motion for nearly three months, and her breasts have enlarged, appear lively and contain a fluid resembling thin breast milk. Her abdomen is not as large as usual at this period of gestation, and sometimes becomes quite small for her. At other times the distension appears to be mostly on one side—always the left. I informed the patient that she was probably somewhat mistaken as to the time of her confinement. I thought it quite possible that her menstrual crisis was upon her, as she informed me that for a year previous to her supposed pregnancy she had been quite irregular as to time, often going six or eight weeks. She expected to be confined about the last of April, but the time came and went with no change in her condition. During the last week of May, by request, I made a thorough examination to ascertain if possible her true condition. The breasts were full, elastic and contained milk. The abdomen was considerably distended, covered with 1½ inches of fat, and as resonant as could be expected in the unimpregnated state. The left half was more distended and resonant

than the right. I found no indication of a tumor of any kind except the distension of the left half of the abdomen, but palpation gave absolutely negative results. I could discover neither fœtal heart nor placental souffle with stethoscope. The cervix uteri was thick, long and elastic. The body of the uterus seemed large, but with two fingers in the vagina I could not force it up so as to be felt above the pubis. I did not introduce a probe, thinking it barely possible that a recent pregnancy might exist. My diagnosis was phantom tumor, though I could not persuade my patient that she was not pregnant.

I saw the patient again during the first week in July, when she informed me that although she had previously been mistaken, she was sure the motion she now felt was that of a child, for it was very strong and perfectly natural, except that she seldom if ever felt it when lying down. This was ominous, but she confidently fixed the time of her confinement at the first week in September. Indeed, her size and every other subjective symptom seemed to bear her out in her idea, yet I did not change my diagnosis. During August she suffered much from neuralgia in her sides and back. Her urine became scant, and her feet and limbs quite œdematous. I prescribed the potassium salts of br. iod. and acet., also citrate of iron and quinine. This treatment gave her marked relief, yet she was becoming very nervous. On the night of Sept. 2d I was called in some haste, and found her in apparent labor. Her pains were severe and expulsive, constraining her to pull with considerable force upon her husband's hands. She said her "water broke" early in the afternoon, after a ride of five miles over a somewhat rough road, and was still discharging during some of the pains, which were now coming about every five minutes. So natural was the appearance of the labor that I felt with some chagrin that I was the mistaken party, and that, whatever might be the period of pregnancy, it was about to terminate. Upon examination, however, I found the external parts moist, but not at all relaxed. There was no dilatation of the os, and the cervix was as long and firm as when I examined in May. The uterus was also apparently unchanged, and not at all affected by her pains, though the contraction of the abdominal muscles was very strong. I at once put ¼ grain of morphine into her arm, and gave her 10 grains of pot. br. and 4 drops of tr. gelseminum. In a few moments her pain all ceased and she became as flat as she had been since the birth of her last child. By palpation I satisfied both myself and her that she had no tumor of any kind. I prepared her a mixture of pot. br. and gel. tr., to be given occasionally until my return, and left her sleeping quietly. On the following day I found her very comfortable, but weak. I directed her to resume her tonic mixture and remain quiet for a week. Within a month she had regained her strength and resumed her household duties. Her breasts had shrunk away to their natural size, and there was no return of any of the indications which had so long existed.

During the first week in October her menses reappeared, and she has since been more regular than at any previous time since the birth of her youngest child, who is now over four years old. I cannot think that this could have been a case of uterine hydatids. The uterus could at no time be felt above the pubis. The great thickness of fat rendered the examination quite difficult, yet I am confident that the abdomen did not at any time contain a tumor with either solid or fluid contents. What the patient supposed to be amniotic fluid was doubtless free limpid urine, unconsciously ejected by the abdominal contractions. In other nervous affections patients often pass large quantities of limpid, odorless urine. Had there been a cyst of any kind accidentally ruptured, it would doubtless have refilled. That she should have mistaken intestinal flatus and muscular twitching for fœtal movements is not strange when she supposed herself pregnant. The same strong mental impression, doubtless, caused the menstrual suppression. It is well known that girls who have been indiscreet and imagine themselves pregnant, sometimes cease to menstruate until they have become satisfied of their mistake. In view of all the facts in the case, I am convinced that I was correct in my first diagnosis. I attribute the abrupt and final termination of the case to the strong mental impression received in the supposed labor, supplemented, perhaps, by the profound influence of the anodynes given at the time.

Batavia, Ill., Oct. 18, 1883.

MEDICAL PROGRESS.

MEDICINE.

MOTOR LOCALIZATION IN THE CEREBRAL CORTEX OF MAN.—M. M. Charcot and Pitres (*Revue de Médicine*) have just completed a critical and clinical study of this doctrine and have passed in review, in greater or less detail, 185 cases, of which 36 cases, gathered from various sources appeared to be contradictory to the general application of the doctrine, and which have led them to the following conclusions:

1st. All the cortical lesions of the cerebral hemispheres in man do not cause interference with voluntary motion, and consequently the cortex of the brain should be divided into two distinct portions, the *non-motor zone*, where destructive lesions never produce permanent paralysis, and the *motor zone*, where destructive lesions always produce permanent paralysis in the opposite side of the body.

2d The non-motor zone comprises:

(*a.*) The whole of the prefrontal region of the brain (orbital lobe, first, second and third frontal convolutions).

(*b.*) The whole of the occipito-parietal region (occipital lobe, superior and inferior parietal lobes).

(*c.*) The whole of the temporo-sphenoidal lobe.

3d. The motor zone comprises only the frontal and ascending parietal convolutions, and the paracentral lobule.

4th. The paralyses induced by destructive lesions of the cortex take on different clinical forms according to the seat and extent of the lesion. Total hemiplegias of cortical origin are produced by extensive lesions of the ascending convolutions. Partial paral-

yses are produced by limited lesions of the same convolutions.

Among these partial or monoplezic paralyses we can distinguish:

(*a.*) The brachio facial monoplegias, which coincide with lesions of the inferior portion ot the ascending convolutions.

(*b.*) The brachio-crural monoplegias, which coincide with lesions of the superior portion of the ascending convolutions.

(*c.*) The facial and lingual monoplegias, which depend upon very limited lesions of the inferior extremity of the motor zone, and particularly upon the ascending frontal.

(*d.*) The brachial monoplegias, which depend upon very limited lesions of the middle portion of the motor zone, and particularly of the middle third of the ascending frontal.

(*e.*) The crural monoplegias, which depend upon very limited lesions of the paracentral lobule.

5th. Whether they are total or partial, the paralyses produced by destructive lesions of the cortex are permanent paralyses, which are accompanied after the lapse of a certain time by secondary contractions of the paralyzed muscles and by descending degenerations of the pyramidal fasciculi.

6th. The irritative lesions of the cortex may give rise to epileptiform convulsions (partial epilepsy, Jacksonian or cortical). These convulsions are ordinarily very readily distinguished from the convulsions of true epilepsy. They commence by a motor aura, and may become general or remain limited to a portion of the body (hemispasm), or to a single muscular group (monospasm).

7th. Generally, the lesions that are susceptible of provoking epileptiform convulsions are seated in the neighborhood of the cortical region, the destruction of which coincides with the paralysis of the muscular groups primarily convulsed at the onset of the attack. They may be situated either on the motor zone itself, or on the non-motor zone, and there is not a constant relation between the form of partial epilepsy and the topography of its irritating cortical lesion, as does exist between paralyses of cortical origin and the seat of the destructive lesions that give rise to them.

8th. The history of motor localizations in man is founded actually upon the comparison of many corresponding cases, regularly collected, and confirmed, for the most part, by all the desirable guaranties. None of the cases opposed to the doctrine of localizations can stand serious criticism. There does not exist a single demonstrative contradictory observation. The observations which are given as such all fail without exception, either because they relate to complex cases (multiple and diffuse lesions, tumors), or because they are not accompanied by sufficient details.

THE SUB-UNGUEAL PULSE.—Dr. Henri Gripat in 1873 noted a case of sub-ungueal pulse, which is considered as the first time that this phenomenon has been observed. Dr. Gripat tells us (*La France Médicale*) that he has never been able since to observe a second case, but he gives the notes of the case cited. It occurred in a young patient suffering from rheumatism of long standing, having an old aortic insufficiency, with hypertrophy and anæmia, during an attack of subacute rheumatism. The pulse was regular, bounding, depressible; and could readily be seen in the arteries of middle size, as the temporal, radial, tibial and collaterals of the fingers. On raising the fingers a little, while the hand remained flat on the bed, the blood could be seen passing briskly under the nail and coloring it red; this color disappeared almost immediately and the nail became white in its center, remaining red only at its periphery. The coloration was transient, intermittent, pulsatile and systolic.

SURGERY.

CASTRATION OF TUBERCULAR TESTICLES.—M. Ch. Monod (*Le Progrès Médical*), having three cases of tubercles of the testicle in the Hospital Necker, discusses, in his clinic, the question of the propriety of castration. He defines the disease as presenting itself habitually in the form of a subacute epididymitis, ordinarily bilateral, without tendency to spontaneous cure, and going on, after a longer or shorter period, to suppuration. When an epididymitis appears without appreciable cause, without blenorrhagia, without traumatism, the question of tubercle arises, which becomes more prominent when that epididymitis resists all treatment, and when a limited suppuration sets in without warning at some one point of the organ, and opens spontaneously, the diagnosis is complete. The local phenomena are not always so clearly defined, and it is indispensable that we examine the annexes of the testicle, practicing the rectal touch to determine the condition of the prostate and of the vesiculæ seminales, and examining the spermatic cord. Generally, there is an induration of the prostate, with a greater or less enlargement, being sometimes unilateral and sometimes bilateral. If the prostate be found healthy, we nevertheless penetrate further into the rectum, to examine the vesiculæ seminales. In young subjects, where these parts are in a healthy condition, they are not readily felt; where they are felt, in a case affected with induration of the testicle, it must be admitted that these organs are enlarged, and probably already the seat of tubercular lesion. The examination of the cord shows a tumefaction of the vas deferens, or, when further advanced, a nodular feel, and a more or less marked monoliform condition.

Recognizing the unity of tuberculosis and an elementary lesion which could be removed by extirpation, and thus possibly prevent a general contamination of the organism, M. Monod advised castration, thus following Prof. Trelat in his views that the suppression of the primitive tuberculous focus was imperative whenever ablation was possible. His answers to objections to this course are, in effect, that as the disease penetrates by one point in the economy, it is not irrational to admit that it is possible to arrest it in its evolution, if it is attacked at its first stage. M. Ch. Nelaton has cited in his thesis, two cases where, after this operation, the patients remained ab-

solutely cured, without the lungs ever becoming affected. The researches of Cadeau, of Martin (of Geneva), of Prof. Richet, and others, have shown that evident pulmonary lesions have retrograded, and, in certain cases, disappeared completely, after the surgical treatment of a local tuberculosis. Prof. Verneuil considers that traumatism, in a tubercular case, gives a stimulus to the preëxisting diathesis and hastens death, either by aggravating a pulmonary lesion which, up to that time, was latent, or in causing a development of tubercular meningitis or of general miliary tubercle. Such operations as the cleansing of old abscesses are particularly objectionable, for, in opening the numerous vessels, they may give rise to a veritable auto-inoculation of the disease; to a direct penetration of the parasite of tuberculosis into the organism. M. Verneuil, however, recognizes that there are cases where these complications have not been produced, and does not conclude that it is necessary to abstain from all operations on tubercular subjects, but that a restraint must be put upon the indications for operative interference. To sum up, tubercle of the testicle is not one of those lesions which we should despair of relieving too readily. To the general treatment, recently enriched by new resources, we have joined, under certain reserves, a more active remedy—ablation of the organ itself; thus suppressing the local disease and its consequences.

Death from the Presence of a Foreign Body in the Œsophagus, not Detected by Catheterism.—M. Lesbros (*Archio de Méd. et de Pharm. Mil.*) gives the case of a soldier who died suddenly from asphyxia after partaking of food. In the attempts to relieve him, instruments were passed down the œsophagus into the stomach, bringing up chymified alimentary substances, but not detecting the presence of the foreign body. The autopsy revealed a thick piece mostly of aponeurotic tissue, and of such a consistency as not to mold itself to the tube containing it. It was 55 grammes in weight, 8 centimeters broad and 2 thick. In shape, like the three middle fingers pressed together, it lay on a level with the junction of the trachea with the larynx, distending the œsophagus enormously, and extending some distance up into the pharyngeal space. To account for the failures to recognize its presence, the constrictors of the pharynx in attempting to pass it downwards, must have folded its surfaces so as to form a groove of which the convexity lay against the membranous wall of the trachea, and it was through this groove that the instrument passed.

Suture of the Bladder.—Prof. G. G. Jolliard, of Geneva, (*Revue Mèdicale de la Souisse Romande*) in operating for ovariotomy tore the bladder, which was adherent to the tumor, transversely 12 centimeters long. He applied the suture of Lambert, taking care not to penetrate the mucous membrane with his catgut thread, so as to prevent its contact with the urine (as in the American suture for vesico-vaginal fistula). He took care to turn back the serous membrane for about one centimeter from the two angles of the wound, having noticed that the vesical fluid in the case of experimental sutures generally drained itself through the angles of the wound.

After completing the operation, Prof. Jolliard placed a sound in the bladder which remained there six days to prevent any accumulation of urine or contraction of the bladder. After the seventh day, catheterism was less and less frequently performed, until toward the third week there was a complete cure of and return to the functions of the bladder.

The patient died six months after the operation of carcinoma of the liver, and Prof. Jolliard found at the autopsy, on the posterior wall of the bladder, the cicatrix, looking like a pearlish white line; the bladder was perfectly supple and normal, and there were no traces of the catguts by which the suture was made.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

Poisonous Fishes.—Eleven cases of poisoning are detailed, of varying severity, some followed by death, and that very soon after the ingestion of the poison. The symptoms of slight poisoning were mainly referable to the nervous system—muscular weakness; tendency to fainting; numbness; affection of vision, of tactile sensibility, and of the muscular sense, which persisted for several days, even for a week. The symptoms of rapid poisoning were an exaggeration of the foregoing, added to which were nausea, gastralgia, abundant biliary and glairy vomiting; death occurring by the progress of a paralysis which attacked the heart and respiratory organs. As the symptoms of instant poisoning, in from ten to twenty-five minutes the subject falls as if suddenly struck down, and loses consciousness, which does not return, although he may live several minutes. The heart loses its force of contraction, and asphyxia is rapid, but no vomiting ensues. In view of the preceding, the writer comes to the following conclusions:

The poison of the genital organs of the tetrodons is a poison paralyzing the nervous centers, which act more or less markedly upon general and special sensibility and upon motility, and cause death by paralysis of the heart and asphyxia.

Poisoning from Handling the Vanilla Bean.—M. le Dr. Sayet gives an interesting communication to the Congress at Rouen on this subject, which is quoted by Dr. Genervix, in *La France Médicale*. The vanilla, as we know, is a fruit with its pod, that is smooth, of a brownish-black color, and contains a thick pulp, in which are scattered little globular grains. There are three varieties, according to the quality and size—the *primiera*, where the pod is 24 centimeters long, the *chica prima;* and the *basura*, where the pod is very small and the pulp is very fat. The vanilla owes its perfume to a volatile oil which crystallizes on the surface of the pod as white needles, which constitute the *givre*. The abundance of *givre* characterizes good vanilla, and the pods are enveloped in some fatty substance like the oil of cacao, to prevent the dissemination of these crystals.

M. le Dr. Sayet, having had occasion to inspect the storehouses of the city of Bordeaux, where at least twenty-five to thirty thousand kilogrammes of

vanilla enter the port every year, noted certain symptoms which, grouped together, constitute "*vanillism.*" In these places, the pods are cleansed, picked over, and classified according to their quality; and these manipulations produce the following symptoms among those conducting the work:

An itching of the face and hands, accompanied with a brisk smarting; the skin is covered with a pruriginous eruption, swells, reddens, and desquamates in a few days. At other times there is a sense of general discomfort, with dizziness, weariness, and muscular pains, which necessitate a suspension of work. The cutaneous affection is caused by an acarus, which has a small, white body, rounded, and found generally at the extremities of the pod. It does not penetrate beneath the skin, but produces prurigo by contact, and its action is increased by the influence of the givre, an irritating substance which aids in the development of the erythema. The nervous affections are most common among the workers of the inferior quality, and may be due to the oily juice which envelopes the grains in the interior of the husk.

OBSTETRICS AND GYNÆCOLOGY.

CONCEPTION DURING AMENORRHŒA.—Dr. Andrè Petit (*Annales de Gynecologie*) after detailing carefully some twenty-four cases, arrives at the following conclusions:

1st. If, in the adult woman of normal constitution, there is no menstrual discharge in the absence of the ovaries or of the physiological action of these organs, ovulation, on the contrary, can take place in certain cases without the discharge of blood which is the external phenomenon of menstruation.

2d. The cases cited do not furnish an argument in favor of the theory of *disjunction* between ovulation and menstruation. The latter, normally dependent upon ovulation, may sometimes be at fault, when there exists in the woman a local or general cause, which makes it impossible for the uterus to furnish the elements of a hæmorrhage under the exciting influence of the ovary.

3d. Amenorrhœa under these circumstances is not an indication of sterility. There exists a large number of cases of pregnancy occurring during amenorrhœa.

4th. The physician should seek with the greatest care the cause of the amenorrhœa, to be able to declare understandingly regarding the aptitude for marriage and fecundation of young girls suffering from this affection.

GARTNER'S DUCTS IN WOMEN.—Dr. J. Kocks, of Bonn, (*Archiv für Gynäkologie*) finds the remains of Gartner's ducts opening close to the posterior margin of the meatus urinarius. A probe of one millimeter in thickness can be passed into them for a distance of from half a centimeter to two centimeters. The openings are generally to be found at the summit of the little lips of mucous membrane which bound the posterior part of the meatus to right and left. Dr. Kocks regards them as the homologues of the ejaculatory ducts in the male. Prof. Böhm finds them sometimes taking on diseased action, when they may simulate gonorrhœa. Unless diagnosticated by everting the margins of the meatus, and pencilling the orifices of the ducts with solid nitrate of silver, this affection may prove obstinate.

DR. OLIVERS'S URINARY TEST PAPERS.—(*British Medical Journal*). These papers are of various kinds, some simple and others compound. The sugar test depends upon the well-known property of indigo-carmine being converted into indigo-white in the presence of certain organic matters. Indigotine, the coloring matter extracted from commercial indigo, when brought in contact with oxidisable animal matter in the presence of alkalies takes up hydrogen and is converted into indigo-white, which, in its turn, under the influence of oxygen, is capable of reconversion into indigotine. Dr. Oliver has saturated filtering paper with a solution of carmine of indigo, sulpho-indigolate of sodium, a substance which on being heated with carbonate of soda in a solution of glucose or saccharine urine, becomes first green, then red, and finally yellow. The paper is cut into slips about an inch in length and a quarter of an inch in breadth, and these are put up into little boxes with corresponding slips saturated with carbonate of soda. The practical application of the test is very simple. One of the indigo-carmine and one of the carbonate of soda papers are dropped into a test-tube and covered with water. A drop of the suspected urine is then added, and the whole is boiled up together over the flame of a candle or spirit-lamp. The color of the indigo-carmine is dissolved out of the paper; and then, if sugar be present, the solution becomes first green, then red, and finally yellow or colorless. On allowing the urine to cool, it absorbs oxygen, and the color is gradually restored. The indigo reaction is given by every form of carbo-hydrate, whilst the copper test is not reduced by all forms of sugar. This, in some cases, will be an advantage, whilst in others it will be found disadvantageous.

The test for albumen is, if possible, still more simple. A little of the suspected urine is poured into a test-tube, and a potassio-mercuric iodide and a citric acid paper are added, when, if albumen be present, a white precipitate almost immediately falls to the bottom of the tube. This test is undoubtedly very delicate, and in one case we obtained the reaction when cold nitric acid gave no precipitate until some minutes later.

THE TELEGRAPH IN MEDICAL JOURNALISM.—The *British Medical Journal*, while complimenting our own *Medical Record*, of New York, upon its journalistic enterprise in providing its readers with telegraphic summaries by cable of the daily proceedings of the British Medical Association during its Liverpool session, shows that it, the *British Medical Journal*, took precedence in this use of the cable, by thus obtaining reports of the progress of cholera in Egypt from eminent medical authorities in Cairo and Alexandria, which were far more extended and elaborate than the reports cabled to the *Medical Record*. We are moving on.

THE

Journal of American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, DECEMBER 1, 1883.

PREPARATIONS OF THE COMMITTEE OF ARRANGEMENTS FOR THE NEXT ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.—It will be seen by the anouncement below that the Committee of Arrangements has commenced its work by appointing a sub-committee on essays and papers intended for presentation in the several Sections of the American Medical Association at its coming meeting in Washington, May, 1884. This is a step in the right direction, and at the right time; and the sub-committee is composed of men well qualified for the duties assigned to them. Now, during the colder part of the year, and while the evenings are long, let those members of the Association who intend to present reports, papers or essays on any subject commence their work at once, and push it to completion in ample time to place it, or an abstract of it, in the hands of the chairman of the sub-committee before the first of April, as required by the by-laws given below.

Notify the committee now of what you intend to do, and then carry out your intentions without delay. It is an old saying that procrastination is the thief of time; and we doubt whether all the other thieves combined ever stole half as much in actual value as this one. Let every member who has anything valuable to communicate feel free to offer it, and not assume that there will be so many others prepared as to leave no time for him.

We are confident that the next meeting will be one of the largest and most important in the history of the Association. And if the members will promptly comply with the suggestions of the sub-committee, the programme of work will be more complete, and the results both in social enjoyment and scientific progress more valuable than have been attained at any previous meeting. The circular of the sub-committee is as follows:

WASHINGTON, D. C.

To the Members of the American Medical Association:—

"The undersigned have been appointed by the Committee of Arrangements a sub-committee on Essays.

"It will be the duty of this sub-committee to solicit essays for presentation to the several Sections of the Association at the meeting to be held in this city in May, 1884, to arrange and classify such essays, distribute them to the appropriate Sections, and to prepare, for the convenience of members and essayists, a programme of the papers assigned to the respective Sections.

"The Committee requests those members who may wish or intend to present papers at the next meeting to communicate, as soon as convenient, the full title of their papers.

"It is also desirable that the Committee should be supplied with an approximate estimate of the time to be consumed with the reading of each paper, and an intimation of the day of the session on which its presentation would be most convenient to the author.

"It may not be possible for the Committe to arrange the programme to the entire satisfaction of every contributor, but if the necessary information is supplied in time, it will be enabled to accomplish much towards such an arrangement.

"The Committee hope the publication of its objects and purposes will be sufficient to command the attention of the members of the Association, and that voluntary offers of essays will obviate the necessity of personal solicitations.

"The weekly issues of the journal of the Association present such advantages for the early publication of the scientific work of the Sections, that authors and investigators will find the Sections the best medium through which to communicate with the profession at large. The knowledge of this fact should be a sufficient incentive to induce such response to the requests of the Committee as will enable it to advance the scientific work of the Sections beyond that of any of the previous sessions.

"Contributors are assured that the Committee will make the most diligent effort to promote the scientific interest of the Association, and to that end solicits the co-operation and active support of the members and delegates.

"All communications relating to essays should be addressed to the Chairman, or some member of this Sub-Committee, at Washington, D. C.

Sub-Committee on Essays, { SAMUEL C. BUSEY, M.D. / W. W. JOHNSTON, M.D. / SWAN M. BURNETT, M.D. / S. O. RICHEY, M.D. / WILLIAM LEE, M.D.

"Approved and ordered to be published in the journal of the Association, by the Committee of Arrangements.

"ALEX. T. P. GARNETT, M.D.,
"Chairman Committee of Arrangements."

Extracts from the "Plan of Organization and Regulations Concerning the Presentation and Reading of Essays":

"The Committee of Arrangements * * * shall receive and announce all essays and memoirs voluntarily communicated, either by members of the Association or by others through them, and determine the order in which such papers are to be read and considered."

"It shall be the duty of every member of the Association who proposes to present a paper or report to any one of the Sections, to forward either the paper, or a *title* indicative of its contents, and its *length*, to the Chairman of the Committee of Arrangements, at least one month before the annual meeting at which the paper or report is to be read. It shall also be the duty of the Chairman and Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession or knowledge, for their respective Sections, the same length of time before the annual meeting. And the Committee of Arrangements shall determine the order of reading or presentation of all such papers, and announce the same in the form of a programme, for the use of all members attending the annual meeting."

"No paper shall be read before either of the Sections, the reading of which occupies more than twenty minutes."

"*Resolved*, That no report or other paper shall be presented to this Association, unless it be so prepared that it can be put at once into the hands of the Permanent Secretary, to be transmitted to the Committee of Publication." (Vide *Transactions*, Vol. xvii., p. 27.)

THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The eleventh annual meeting of this important organization was convened in Merrill Hall, Detroit, Michigan, November 13, 1883. The number in attendance was less than at several previous meetings. At 11 o'clock A. M., the meeting was called to order by the President, Ezra M. Hunt, M.D., of New Jersey. A considerable number of new members were elected.

The Treasurer, J. Berrian Lindsley, of Nashville, Tenn., reported receipts to the amount of $4,257.23, and disbursements to the amount of $2,928,98. The first paper read was on "Cattle Fever," by D. E. Salmon, D.V.S., of the Department of Agriculture, Washington, D. C. The writer gave at considerable length the history of the disease, more familiarly known as Texas cattle fever. He discussed also its nature and treatment.

The next paper was on "Hog Cholera," or the swine plague, by J. M. Partridge, M.D., of South Bend, Ind., which contained an interesting history of the disease in this country, and a summary of what has been determined concerning its nature, and the means for its prevention.

The Secretary read an interesting paper by W. T. Belfield, M.D., of Chicago, giving the results of recent investigations concerning the nature of the disease known as the "swellhead" in cattle.

During the afternoon session, Surgeon George M. Sternberg, U. S. Army, read an interesting paper on "The Causes and Nature of Malaria"—the supposed efficient cause of periodical fevers. He claimed that there were strong reasons in support of the doctrine that malarial fevers are caused by a "bacillus malariæ;" but admitted that they were not conclusive.

A. L. Gihon, M.D., U. S. Navy, read a paper by Surgeon Alfred A. Woodhull, upon the "Ætiological Association of Organic Matter with Malaria." The object of the writer appears to have been, to show that the old doctrine of the presence of organic decomposition as an essential element or factor in the production of malarious fevers, should not be abandoned. And he sustained this position by many interesting and important facts.

Surgeon Charles Smart, U. S. Army, followed with a third paper on the important subject of Malaria, in which he still further sustained the doctrine that malaria is essentially generated in moist soils containing organic matter, and is soluble in the subsoil water, and contaminates the drinking water as well as the atmosphere.

The evening of the first day was occupied with public addresses. Those of welcome by Governor Begole and Drs. Wm. Brodie and John Avery, were complimentary and appropriate for the occasion, but not of special scientific importance. The address of

the President, Dr. Ezra M. Hunt, was long, but interesting throughout. It contained a history of the origin and progress of the Public Health Association, and much relating to the progress of sanitary science, with suggestions for future work.

On the morning of the second day, a fourth paper on "Changes in the Types of Malarial Fever in Sumpter County, Alabama, from 1833 to 1883" was read by Dr. R. D. Webb, of Livingstone, Alabama. This was followed by a general discussion of the subject of malaria by several members, and which occupied nearly all the morning session. During the afternoon session papers were read on "Food Supply," by Dr. W. B. Newton, of Patterson, N. J.; on "Vital Statistics," by A. L. Gihon, U. S. Navy; on "The Adulteration of Food," by A. R. Leeds, PH.D., of Hoboken, N. J.; on "Yellow Fever," by Dr. R. B. S. Hargis, of Pensacola, Florida; on "School Hygiene," by Dr. Charles J. Lundy, of Detroit; on "Physical Culture," by Prof. D. A. Sargent, of Cambridge, Mass.; and on "The Eminent Domain of Sanitary Science, etc.," by Dr. James E. Reeves, of Wheeling, W. Va. This last paper may be found in full in the present number of the JOURNAL. The evening session was occupied by the reading of an interesting paper on "The Increase of Insanity in the United States; Its Causes and Sources," by Dr. Foster Pratt, of Kalamazoo, Michigan. Most of the papers whose titles have been given were well prepared, and contained facts and statements of much importance, but their number precluded any considerable discussion.

The morning of the third day was mostly occupied in the transaction of miscellaneous business and the election of officers for the ensuing year. Two papers were presented and read, however; one on "The Removal of Decomposable Materials from Households," by Dr. Rudolph Hering, of New York; and the other on "The Overhead Ventilation of Sewers," by Dr. Wm. Oldright, of Ontario, Canada.

The afternoon session was opened by the reading of a paper on "The Sanitary Care of Households," by Dr. Joseph H. Raymond, of Brooklyn, N. Y., which was followed by an interesting discussion. Then followed the reading of papers on "Pullman, from a State Medicine Point of View," by Dr. O. C. DeWolf, of Chicago; and on "The Restriction of Small-pox," by Dr. J. N. McCormack, of Bowling Green, Ky. Several additional papers were read by their titles only.

In the evening the Association was addressed on the subject of "Sane Humanity," by Bishop Thompson, of Mississippi, after which the usual complimentary resolutions were adopted and the Association adjourned. The following are the officers elected for the ensuing year:

President—Albert L. Gihon, Washington, D. C.

First Vice-President—James E. Reeves, Wheeling, W. Va.

Second Vice-President — Erastus Brooks, New York.

Secretary—Irving A. Watson, Concord, N. H.

Treasurer—J. B. Lindsley, Nashville, Tenn.

From the foregoing sketch of the meeting at Detroit it will be seen that much work was done in a short time, the real value of which cannot be determined until the papers are published in full in the volume of Transactions, which, if we wait the usual period, will be an uncertain time in the future.

We see no good reason why this Association continues to have its regular annual meetings a few weeks after the commencement of the annual courses of instruction in the medical colleges throughout the country. There are certainly some among the eminent members of the profession engaged in the medical schools who are interested in the subjects which engage the attention of the Association. But they cannot, in justice to the classes they are engaged to teach, devote a week to attendance during the college terms.

NEWS ITEMS.

THE ANNUAL REPORT OF THE SURGEON GENERAL'S OFFICE, U. S. ARMY.—As so much of the work done in the Surgeon General's office has come to be of vital importance to the general profession, in the maintenance and preservation of the museum, in the growth and accessibility of the library, and especially in the continued publication of the *Index Catalogue*, a notice of Volume 4 of which recently appeared in the columns of this journal; that it is advisable for the civil practitioner to so keep himself posted upon the views and recommendations presented annually to Congress by that office for its further advancement, that he may use his influence in his individual capacity, and as a member of influential societies, to govern the tone of Congress for the good of the profession. With this object prominently in view, we reprint from the daily press—(*Army and Navy Register*)—the following:

The report of the Surgeon General of the army for the fiscal year ending June 30, 1883, bears no signature, but is submitted to the Secretary of War with the following indorsement by the acting surgeon general, D. L. Huntington: "The foregoing annual report of the finances and general transactions of the office of the Surgeon General, U. S. Army, was prepared and completed by the late Surgeon General Charles H. Crane previous to his death. It is respect-

fully submitted without his signature to the honorable the Secretary of War."

The balance for the medical and hospital department on hand June 30, 1883, was $44,821.39, but this sum was covered by previous contracts and obligations, and the greater part of it has since been expended. The balance out of the appropriation for artificial limbs was $26,330.06. Of the appropriation for appliances for disabled soldiers $1,778.75 remained. The balance out of the medical and surgical history fund was $8,534 65. Out of the appropriation of $10,000 for museum and library, $2,094.55 remained on hand at the close of the fiscal year. It is recommended that a truss shall be furnished to every one who is ruptured in the line of his duty while serving in the army or navy.

The report states that the cost of supplies for the current fiscal year will exceed the amount expended last year, and it is recommended that Congress be asked to appropriate $250,000 for that purpose. The monthly report of sick and wounded received at the surgeon general's office represent for the year an average mean strength of $20,914 white, 2,390 colored troops and 208 Indian scouts. Among the white troops the total number of cases of all kinds taken on the sick list was 37,697, being at the rate of 1,802 per 1,000 of mean strength, an increase of 123 cases per 1,000 over the number reported for the previous year. The total number of deaths among the white troops was 214, or 10 per 1,000 of mean strength. The total number of white soldiers discharged the service for disability was 879, or 42 per 1,000 of mean strength. Among the colored troops the total number of cases reported was 4,689, or 1,962 per 1,000 of mean strength, an increase of 152 per 1,000 over the rate reported for the previous year. The total number of deaths was 26, or 11 per 1,000 of mean strength. The total number discharged for disability was 101, or 42 per 1,000 of mean strength. The total number of cases reported among Indian scouts was 44, being at the rate 212 per 1,000 of mean strength. The total number of deaths was 2.

Diseases of the respiratory organs stand first in numerical importance, of which about 64 per cent. are catarrhs of the upper air passages. Extremes of variation in temperature will account in part for the frequency of these diseases, but to a larger extent insufficient ventilation of barracks and dormitories, as well as irregular and unequal distribution of artificial heat during cold weather, must be held responsible.

Wounds, injuries and accidents stand second on the list of causes impairing the effectiveness of the Army. The large number recorded in this class may probably be attributed to the use of troops in mechanical and laborious employments, which form so large a proportion of the soldier's duties. As an indication of the peculiar hardships to which our troops are exposed, the rates of admission for wounds, accidents and injuries are 122 per 1,000 higher than those reported for the German army, and 142 per 1,000 higher than the decennial rate of the British Army.

It is interesting to note that the colored troops make a particularly favorable showing in the small number of admissions for alcoholism and its results, exhibiting, as they do, a rate of only 4 per 1,000 to rate of 76 per 1,000 of mean strength among the whites. On the other hand, in diseases of the nervous system they have an unexplained preponderance.

The report recommends a thorough revaccination of every individual of the military establishment. This means of preventing the spread of small-pox has proved very effective in the German army.

The report gives an account of a mild epidemic of yellow fever which occurred at Fort Brown, Tex., during the months of August, September, October and November, 1882. Assistant Surgeon W. C. Gorgas, U. S. Army, and Hospital Steward S. W. Reynolds, U. S. Army, contracted the disease. Lieutenant Wenie died on the fifth day after his seizure.

The number of recruits examined by army medical officers and private physicians during the year was 5,964 white, 428 black, and 247 Indian scouts. The total number of rejections was, for white 2,063, for black 131, Indian scouts, none.

The surgical records show only two casualties from actual warfare. The wounds and injuries reported were 5,692. The number of operations performed was 121.

Six hundred and thirty-eight specimens were added to the collection of the Army Medical Museum last year. The contributors to the collection were 9 surgeons, 20 assistant surgeons, 12 acting assistant surgeons, 1 hospital steward, and 49 citizens.

The addition to the library during the past year includes 3,912 volumes and 5,000 pamphlets, making the total number in the collection about 60,900 volumes and 68,700 pamphlets. To supply books required to make the files of the library complete will require an annual appropriation of $10,000, and it is recommended that this amount be appropriated.

The report again calls attention to the increasing necessity of a suitable fireproof building for the accommodation of the Army Medical Museum and the library.

An Army Medical Examining Board, consisting of Lieutenant-Colonel Joseph B. Brown, and Majors B. A. Clements and J. H. Janeway, surgeons, was convened in New York city on the 1st of March, 1883, for the examination of assistant surgeons for promotion, and of candidates for appointment in the medical corps of the Army.

The names of the candidates found qualified will be reported to the Secretary of War in season for their appointments to be submitted to the Senate when Congress assembles in December next.

There are now 9 medical officers on sick leave of absence; of these, 3 have been found incapacitated for active service and recommended for retirement by Army retiring boards, viz: Assistant Surgeon T. F. Azpell, who has been on sick leave since April 7, 1877; J. W. Buell, who has been on sick leave since August 23, 1877, and W. R. Steinmetz, who has been on sick leave since September 16, 1878; one has been recommended to be brought before an Army retiring board, with a view to his retirement from active service, viz: Assistant Surgeon J. V. DeHanne, who has been on sick leave since June 22, 1879; and

3 more are regarded as permanently disabled. Four medical officers are on ordinary leaves of absence after a tour of duty on the frontier, leaving 162 medical officers for duty October 1, 1883.

The medical officers who have died during the year are as follows: Brigadier and Brevet Major General Joseph K. Barnes, surgeon general (retired), at Washington, D. C., April 5, 1883; Colonel Charles C. Keeney, surgeon, at San Francisco, Cal., January 30, 1883; Major George P. Jaquett, surgeon, at New York City, N. Y., October 6, 1882; Captain William H. King, assistant surgeon, at Philadelphia, Pa., August 23, 1883; Captain Holmes O. Paulding, assistant surgeon, at Fort Sidney, Neb., May 1, 1883; Captain Bernard G. Semig, assistant surgeon, at San Francisco, Cal., August 1, 1883; First Lieutenant E. D. Schue, assistant surgeon. at Fort Thomas, A. T., October 1, 1882; Captain Joseph H. Bailey, assistant surgeon (retired), at Mt. Carmel, N. Y., April 1, 1883; Captain Henry R. Silliman, assistant surgeon (retired), at Philadelphia, Pa., January 1, 1883.

The last pages of the report are taken up with the full record of the services of these deceased medical officers.

STATE MEDICINE.

CONCERTED ACTION BY STATE BOARDS OF HEALTH.

[Reported for the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.]

There has been a growing conviction among leading sanitarians entrusted with the official execution of practical health measures, that while the work of the American Public Health Association is of inestimable value in promoting the interests of sanitary science and sanitary reform, there is a constantly increasing need for an annual conference of State and other health officials, in regard to practical affairs of their every day work, some part of which work cannot profitably be discussed in a public meeting consisting largely of persons not familiar with its details.

After due consideration, a meeting of representatives of State Boards was held at Detroit during the recent meeting of the American Public Health Association, at which, after discussion, it was decided to call a meeting of the Secretaries, or other representatives of all State Boards of Health, in Washington, during May, 1884, for the purposes mentioned, and with the view of organizing a Section devoted to State Board work in the present Association, or the formation of a permanent separate organization especially adapted to the needs of State Boards of Health. Drs. Henry B. Baker, of Michigan, and J. N. McCormack, of Kentucky, were appointed a committee to confer with and secure the coöperation of all the State Boards in fulfilling the object of the meeting, and Drs. C. W. Chamberlain, of Connecticut, J. E. Reeves, of West Virginia, and Stephen Smith, of New York, were appointed a Committee on Organization, to report at the meeting in May.

The American Medical Association meets in Washington in May; and another reason for holding the meeting in Washington is that the representatives of the State Boards may also have an opportunity for conferring with the Senators and Representatives in Congress from their respective States in regard to national sanitary legislation. It would seem that whenever the health authorities of all the States shall meet, discuss and agree upon the course they will pursue with respect to yellow fever, cholera, small-pox, or any disease which endangers public health, without regard to State lines or borders, and whenever all State Boards shall act in concert, considerable progress will have been made in solving the problem of what are the best methods for national action in regard to inter-State and maritime quarantine or inspection and disinfection, as well as in the practical control of epidemic diseases within the several States of this country.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

A very large attendance of members of the Chicago Medical Society were present at the regular semi-monthly meeting, held on the evening of November 19th, for the transaction of considerable important business and hearing a number of scientific essays. The President, Dr. D. W. Graham, presided. In the absence of the Secretary, Dr. L. H. Montgomery, upon request of the Society Dr. James E. Henderson acted as Secretary *pro tem.*, and subjoined is the report of the proceedings, considerably abbreviated from his stenographic report:

Drs. Robert H. Babcock and W. L. Copeland, upon recommendation of the Board of Censors, were unanimously elected to membership.

Prof. E. C. Dudley, of the Chicago Medical College, read a paper on "The Immediate Operation for Laceration of the Perinæum." He advocated the operation immediately, or as soon after the confinement as possible, and discussed the subject in all its bearings. But as we expect to have the paper entire for publication in a subsequent number of the JOURNAL, we omit what would be an imperfect synopsis here. The reading of the paper elicited the following interesting discussion:

Dr. George H. Randell was particularly gratified that the matter of faulty and incomplete union of these cases had been brought so prominently before the Society. He himself had thought of the necessity for something more than we have gained by the immediate operation; he desired the author to explain more fully the frequency of the transverse rupture.

Dr. M. H. Thompson thought possibly it made no particular difference whether the operation was deferred for two days after labor or longer. My experience shows that in a much longer time after the operation for laceration than is recommended in the paper, I have placed the knees together, ordered the nurse to keep the parts clean with a douche of carbolized water, and taken all the necessary antiseptic precautions, and I have had perfect union to follow. I have again known cases in which union was

obtained, but it occurred irregularly, where perhaps the edge of the mucous membrane would be attached to a quantity of muscular tissue, but the union was firm. I think the patient can be placed in different positions, so long as it is done with gentleness, but I do not understand why it is so essential to keep them on the back, as stated in the paper.

Dr. R. H. Engert—If the laceration is found to be very deep, if it involves the rectum, I do not think a patient should be operated on under two months, and I will ask the author of the paper if he would operate, under any circumstances, immediately after confinement, no matter how deep the rupture? I lately had a case where there was a laceration in three different places, sideways up into the vagina, about an inch into the rectum, and in the perinæum proper toward the right side, and occurred to a woman with the tenth child. In this case I do not think it would have been practicable to perform an operation right after her confinement, as the parts were so much bruised that it would have endangered success in operating. Three months after the labor I performed an operation with perfectly good results, and which have been maintained up to the present time.

Dr. E. Ingals said: It is perhaps presumptuous for me—a general practitioner—to engage in this discussion, for what can I hope to add to that which has already been said, on a subject that has been so fully treated by those who make a special study of gynæcology. Yet I think there are some useful practices relating to the management of perineal laceration that have not been alluded to. I will say in advance that I am conservative in my views, both in the profession and out of it. I do not easily relinquish old practices. I think the profession is inclined to trust too much to things because they are novel, and about which we hope more than we know; and to reject measures whose usefulness has been demonstrated by long experience. The past history of our profession is full of treasures that have been discarded and that lie neglected all along its pathway. For many years I have attended such a number of obstetric calls as naturally fall to the lot of a general practitioner. Of course, I have seen a good number of perineal lacerations. I will tell you what I have not done for them and the results. I have not bound the limbs together, I have not required the patient to lie on her side, but have allowed her to take the position that she found to be the most comfortable. I seldom tell her that anything is wrong. If the laceration is extensive I may say to the nurse, "the skin is a little torn; see that the parts are kept scrupulously clean." No woman that I ever attended has had the primary operation performed, nor do I know of one who has had it done secondarily. I do not believe that any one of them would have been benefited by either operation. I can recall but a single case that required anything except cleanliness. This was a primipara, in whose case a severe labor and instrumental delivery resulted in extensive laceration. The wound did not heal kindly, and I stimulated the granulations by a few applications of nitrate of silver. She has since borne a number of children in rapid succession, and has had excellent health. I have cases of laceration that have remained under my observation twenty-five years, and they have experienced no trouble from it. I have had no case that I think would not have been injured by the primary operation. This operation must give the patient some shock and inconvenience, and it may increase her septic dangers, and all this when she is just emerging from the pangs and perils of labor. One-half of the cases of confinement in Chicago are attended by midwives, and I do not suppose any of them have this operation performed. I have consulted a number of the older practitioners of this city, and they all manage their cases just as I do mine and are rewarded with like results. We should not forget how well the lacerated perinæum will do when left to the reparative processes of nature alone. I am embarassed in not being able to assent to the teachings on this subject of eminent gynæcologists, but I should feel that I had done less than my duty, if I neglected to say a word in behalf of the poor women who bear our children.

Dr. J. H. Etheridge at this point asked the doctor—you say you never saw a case benefited by the operation? Answered—No case that I have ever attended in my own practice; but if the laceration is very extreme, and consequent prolapsus has occurred, then no doubt the operation would be beneficial. No case in my own practice, primarily, I am sure—and so far as I know, secondarily—has been benefited by the operation.

Dr. L. A. Harcourt—My own experience has been rather limited, but for seven or eight years, I think, I never met a case of rupture of the perinæum. I said to some of my neighbors, physicians, I have never in my practice had a case of this kind. I was cautioned to examine my patients after confinement. Heeding this caution, and examining them carefully, I found quite a number, and for the past three years I have operated in every case where I was permitted; what might be called the immediate operation. In some cases, I delayed 20 hours; not longer, and in every case, union by first intention was obtained. The gentleman preceding me spoke of the fear of alarming patients by telling them a serious accident has occurred. It is not my practice to tell a patient in a way that would alarm her. I have practiced the method spoken of in the paper, of paring the edges of the laceration, and I always use the deep sutures, passing them completely beneath the laceration; this, with good care, and the patients have all recovered. I have had only one case of "central laceration," which occurred eight years ago. The labor was quite easy, the child was small, and I was astonished to find a laceration. On examination next morning, I found a small perforation, closer to the vaginal outlet than to the rectum. In that case, I did nothing but use a mild application of nitrate of silver, so as to favor healing of the wound, and it proved a success. I think the danger of septic poisoning is overestimated. A year ago last March, I was suffering from inflammation of the eyes, and was called upon to attend a woman in confinement. The child was very large. The head was born without any rupture to the peri-

næum; the cord was twisted around the child's neck, and I made an attempt to draw the cord down, so as to save the child from strangulation. Pains came on suddenly, the body was forcibly expelled, and tore the perinæum through entirely, the anterior half for three-quarters of an inch.

I was in no condition to perform an operation, and summoned a brother practitioner, who kindly consented to do so for me, if the patient would not object. Her friends, however, refused; she neglected every precaution in regard to cleanliness, and yet the woman made a good recovery. She came to me afterward, and complained that she could not retain fæcal matter, but appeared to be in good health. Now, that was a most favorable case for blood-poisoning. All the surroundings were most favorable for it; no measures were taken to keep the parts clean. I am therefore in favor of the immediate operation in almost every case, for my own all resulted favorably.

Dr. T. P. Seely—My experience is, in succeeding to produce good results, simply by placing the patient on the side, fixing the limbs together, closing the parts and keeping them in apposition for a few days, and observing strict antiseptic precautions; and I would like to ask the author, while I am on the floor, why he places the patient on the "dorsal decubitus" during the operation, as I do not understand how he fixes the patient afterward.

Dr. Dudley, in closing the interesting discussion, of which the foregoing is a résumé, said, relative to the frequency of the transverse rupture of which one member asked, that he was unable to answer positively. Within the past year, however, he has seen at the Mercy Hospital four or five cases of this kind; also, that he had met with two cases in private practice. I am, therefore, inclined to think this form of rupture is quite common. Thinks incomplete central rupture of the perinæum is the form which most often occurs; have noticed cases in which central rupture had occurred, and in which the posterior commissure had not been ruptured at all. Under these circumstances the rupture is always overlooked, unless very careful examination is made with one finger in the vagina and one in the rectum. If Emmett's idea is not very much the best, then the basis of it may rest in the fact that in incomplete rupture the transverse variety is the most ordinary form. I do not know whether this is the case, but when that form of rupture occurs the perinæum divides in front so that the parts go to either side, and the shape of the wound is like the letter T, as was stated in the paper. Moreover, I do not mean to say positively that after contraction of the cicatrix, that it will be a cause of a smaller perinæum, but it may be a possible cause, and as one of the speakers asked, if I would operate within two days after laceration occurred? I can reply by stating yes, or sooner; and if not called sooner I should operate on the strength of my experience. I prefer the dorsal position, with the thighs flexed and a small roll placed under the knees. This is the best position for the patient. There is no objection to placing a patient on the side if she again will assume the dorsal position; and the patient generally finds the latter the easiest. I always place a bandage around the knees and legs to keep them constantly in the same position. My experience in the primary operation for complete rupture through the sphincter ani muscle is confined to one case, in which union occurred. Apparently, the union of the perinæum was pretty good, but not as good as if a better operation had been performed, there being a slight recto-vaginal fistula left. The patient has had several children since. I think I will make this statement in general, that I would operate in every case of ruptured perinæum, especially if the rupture involved the deeper structures of the vaginal portion, but where rupture occurs through the sphincter ani muscle, in a majority of cases union does not take place, although cases of this kind are on record in which union of this sphincter has occured. There are cases in which the internal sphincter muscle has been equal to the retentive needs of the patient. Regarding the needle to be used, the one used by Thomas, Emmett and others, is the straight one. The reasons for preferring it are the following: A straight needle can always be introduced in such a way as to know where the point is if you know its length. The curved needle is much larger and makes a larger incised wound after every suture. The straight needle is perfectly round, and makes a punctured wound, and, again, *per se*, there is an unnecessary amount of damage done with a curved needle. This central transverse rupture is one in which it is difficult to see how the parts can be kept in contact by tying the knees together. The tissues retract afterwards, and tying the knees together would have no influence at all unless with the vaginal portion of the wound; neither would sutures passed through the cutaneous surface of the wound—only sutures passed in the axis of the vaginal outlet could, under these circumstances, bring that torn tissue down to the place from which it was torn.

A paper on Glycosuria was next read by Dr. Oscar C. DeWolf. (see this paper) published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Nov. 24th, 1883. Discussion upon this very important subject was deferred until the next meeting.

Dr. F. E. Wadhams was to have presented a paper on "Nerve-Stretching" for the relief of an obstinate case of sciatica, but the late hour precluded its being read.

The resolutions presented at the last meeting regarding "The Nucleus of a Medical Library" were taken from the table, and Dr. Edmund Andrews said, "the formation of a medical department in the public library, accessible to every family physician in the city, is a greater public necessity than the duplication of a vast number of novels." The result of the conference with the public library board was that the books would have to be presented and not loaned to the library. This Society would incur no expense in taking care of them. He moved, therefore, the passage of the resolutions reported at the last meeting, and that $500 be appropriated for the purchase of books and journals, which was easily carried; also that a committee of three on Library be now appointed by the chair, resulting in Drs. E. Andrews,

F. C. Hotz, and O. C. DeWolf forming the committee for three years, two years, and one year each, in the order their names appear. Dr. J. G. Kiernan wished to have a committee on Medical Legislation appointed, as many of the laws relating to our profession in this State are in a very unsatisfactory condition. Particular reference was made to the confidential relations between physician and patient, and the former's appearance on the witness stand, as any member of this Society may be compelled to reveal the secrets of a patient. For this and similar reasons he offered the above suggestion in the form of a motion, to determine what measures are needed to remedy existing laws on this subject. The motion was unanimously carried. The chair announced that he would appoint the committee at the next meeting.

Another motion made and seconded that we do now adjourn, was also unanimously carried.

L. H. M.

BOOK REVIEWS.

TRANSACTIONS OF THE MEDICAL AND CHIRURGICAL FACULTY OF THE STATE OF MARYLAND AT ITS EIGHTY-FIFTH ANNUAL SESSION, HELD AT BALTIMORE, MD., APRIL, 1883. 8vo. 302 pp.

One of the most interesting parts of this volume is that which treats of the growth and development of the library, and the address of Dr. John S. Billings on Medical Bibliography, which has already been published and commented upon. The report of the Library Committee shows a valuable addition of new and recent works, the number of volumes in the library reaching 3,346, with 108 journals received regularly, and also shows an interest in the older examples of medical literature, with an interest in medical portraits, old diplomas, and other material which, while it is no longer of much practical value, represents the history and progress of the profession very satisfactorily. Our institutions are still young enough to make it possible to secure these records, at the expense of some effort—and old enough to make them scarcer and more valuable every day. The report of the Committee on the Directory for Nurses in Baltimore does not appear to be very encouraging. This city of 332,190 inhabitants (census of 1880) finds use for only 29 nurses, male and female, outside of its hospitals, who were employed 55 times, and the revenue of the Directory was $111.41 for 11 months —which represents the age of the Directory.

Dr. Richard Henry Thomas gives, as the report of the Section on Practice, the result of four and a quarter years of observation on the influence of season and weather on the death-rate from diphtheria in Baltimore. His article is illustrated by charts, which give the curves of relative humidity, temperature, velocity and direction of wind, rainfall, and the correspondent prevalence of diphtheria throughout the year; and he concludes that the weather has an important bearing upon the rise and fall of the violence of the disease; temporary changes having but little effect. The conditions favorable to a rise are, a low barometer, low winds, especially from the east, high temperature with high humidity, and heavy or continued rainfall. The conditions favorable to a fall are, high winds, especially from the west, low humidity with high temperature, or high humidity with low temperature, and (generally), a high barometer.

The report of the Section on Materia Medica embraces observations by Dr. John S. Lynch on the antipyretic effect of carbolic acid, and on the astringent influence of rubus procumbens in diarrhœa and dysentery.

Dr. Wm. T. Howard, in the report of the Section on Obstetrics and Gynæcology, discusses vesico-vaginal and utero-vesico-vaginal fistulæ, with reference to cases. In the report of the Section on Psychology, Dr. J. W. Chambers gives seven cases of nerve-stretching for the relief of sciatica, with perfect and almost immediate relief in five; partial relief in one, and no improvement in one, which was operated upon twice.

Dr. H. Clinton McSherry furnishes us the report of the Section on Ophthalmology, Otology and Laryngology, the details of two cases of laryngeal stenosis, and discusses the treatment, with full illustrations to the text, of the special apparatus required.

The Direct Action of Ethyl Alcohol upon the Heart, by Dr. H. Newell Martin, is a plain statement of interesting physiological experiments, and, what is rare in physiological work, they are easy of comprehension. Dr. Martin complains that the immense literature upon the subject, comprehending 160 titles in the Index Catalogue of the Library of the S. G. O.; is of very little use; that the so-called experiments with alcohol are usually with a little alcohol plus a good many other things. He concludes that blood containing ⅛ per cent. by volume absolute alcohol, has no immediate action on the isolated heart; ¼ per cent. diminishes the work done within a minute; ½ per cent. may reduce amount pumped out by left ventricle to so small a quantity as not to supply the coronary arteries. This is due to influence on the elasticity of the cardiac muscle; to a lowering of its tone, either by direct combination or by influence upon its nutrition, possibly direct. These experiments were performed directly upon the heart. To produce such effect through the stomach, much more alcohol would have to be injected, that is, equal to ¼ per cent. of the total blood in the animal.

Dr. C. W. Chancellor, under the head of Sewerage of Cities, gives a long and interesting description of Siemen's pneumatic system, as applied in the city of Luxembourg. Dr. J. D. Arnold gives two cases illustrating some forms of laryngeal phthisis. Dr. S. C. Chew gives the notes of a case of dexicardia. Dr. S. McLane Tiffany, in giving the details of an operation for the removal of the upper jaw, discusses the advantages of the prone position during operations upon the jaws, and of semi-narcotizing the patient with opium or one of the alkaloids before administering the anæsthetic. Dr. Philip C. Williams reports three instructive cases of malarial fever in puerperal women, where the diagnosis was gravely embarrassed. The list of membership in this Society embraces 216 names.

TRANSACTIONS OF THE COLORADO STATE MEDICAL SOCIETY, AT ITS THIRTEENTH ANNUAL CONVENTION HELD IN DENVER, JUNE, 1883. 8VO., 122 pp.

From the list of members published in these transactions, it would appear that the Colorado State Medical Society has 109 active members to do its work, and from the paper by Dr. Jesse Hawes, entitled Charlatanism in Colorado, it would appear that a large part of that work has been to expose and get rid of quacks and impostors, which it seems to be doing quite effectually. The President, Dr. P. R. Thombs, takes as the theme of his annual address, "The Neuropathic Diathesis, or Insane Temperament and its Management by the State," in which he emphasizes the necessity for State laws governing the sexual commerce of such, in or out of wedlock, by forbidding marriage of a certain class, and quarantining effectually the victims. Dr. R. G. Buckingham gives a report on Obstetrics, in which he refers most particularly to his own practice and experience in cases of difficult labor. Dr. Edward Rivers in his report on Ophthalmology gives an interesting résumé of the progress of to-day. The Bacillus Tuberculosis is discussed by Dr. Charles Denison, and this followed by two interesting articles—one by Dr. S. Edwin Solby on Climatology, in which he discusses temperature as influencing climatic change; and the other on the Analysis of Signal Service Statistics with reference to Colordo Climate, by Dr. Samuel Fisk. Dr. J. W. Collins reports a Case of Uterine Stricture. Dr. Geo. W. Cox discusses Areolar Hyperplasia of the Uterus, and in considering the means of diagnosis, he recommends the passing of the whole hand into the vagina under the influence of an anæsthetic, which practice he applies to virgins as well as to married women. Dr. J. J. Macdonald shows a symptom of the infection now pervading medical societies, by breaking out all over in verse, in a poem replete with variety, puns and rhyme.

DOMESTIC CORRESPONDENCE.

HAY FEVER.

In the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of October 13, 1883, is published a paper on Hay Fever, by C. Hixson, M.D., of O'Fallen, Illinois.

As the writer says, "I have been a sufferer from hay fever for twenty-five years," and that "my opinion is that those who cure hay fever have never seen a genuine case, but have mistaken it for a case of common cold," I think it is time that he should hear from one who, like himself, has "sat up of nights in order to get a modicum of sleep."

I prefer to call the disease summer catarrh, as I believe the dust from hay, like the pollen from rag weeds, is only one of the causes of that peculiar disease.

If the doctor, when he says no one can cure hay fever, means such a cure as will ever after secure the patient from another attack, perhaps he is right; but if he means to state that is not amenable to such cure as are intermittent and remittent fevers, then I think he has "during the last twenty-five years" not swallowed the right "half of the materia medica."

As I have suffered from hay fever thirty-seven years, just twelve years longer than Dr. Hixson has, I shall take it for granted that I know what the disease is, and therefore waste no time in describing the frontal headache, the stuffed feeling of the nose, nor the number of handkerchiefs I have made ready, in a given time, for the washerwoman, nor the nights, seventy-two hours long, I have "sat up" because I could get my "modicum of breath" in no other position. But to the treatment.

When a sufferer finds that an attack of summer catarrh is approaching, I would have him take from 15 to 20 drops of the tincture of opium and 15 grs. of iodide of potassium. He should repeat the tincture of opium every hour until the headache, the choriza and the tightness of the chest are relieved. This will generally occur after the second or third dose has been taken. Then have him take 15 to 20 grs. per day of sulphate of quinia, divided into three doses and taken after meals with 10 grs. of iodide potassium. These last remedies should be continued two or three days, or until all the symptoms of the disease are removed. If the symptoms for which the tincture of opium were given recur, it should be repeated in full doses as often as required. When I say full doses I do not mean, the so many drops of the materia medica, but the quantity sufficient to allay the symptoms for which the opium is administered. Last night I took 100 minims of tincture of opium in two doses for what I believe to have been my last visit of hay fever until next July—possibly until August or September. To-day I visited my patients as usual; and to-night I am writing this letter.

And now I come to the most unpleasant part of my duty, as I take no pride in the facts which the truth compels me to state. Twenty years ago I was advised by a medical friend to smoke tobacco for my infirmity. I took his advice. During the first ten years after I began my evil habit I very seldom had to resort to opium, quinine and iodide of potassium. Since that time the tobacco smoke has lost some of its potency, but the other remedies named never fail.

I hope when Dr. Hixson reads this paper he will not say he has tried all of them with no benefit, until he tries them in the quantities, and in the order stated. Of course, if he prescribes opium to a new patient, it is not necessary for me to suggest that he must gradually explore his way to such patient's opium capacity, which often lies far beyond the maximum laid down by the authorities.

Such is the treatment of summer catarrh, by which I have made life tolerable in one of the most annoying diseases which affects the human body. If Dr. Hixson's case has not become an outlaw to materia medica I hope to hear a good report from him.

S. S. BOYD,

DUBLIN, IND.

STRICTURE OF THE ŒSOPHAGUS.

MR. EDITOR:

No. 16 of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION contains an interesting article on "Stricture of the Œsophagus," etc., that reminds me of the following case:

One year ago Mrs. A. D. Peebles, of near Shelbyville, Ill., was taken with puerperal convulsions, and had three or four M.D.'S called. According to Mr. Peebles statement she was compelled to swallow pure, undiluted chloroform. In about three weeks after her confinement she had great difficulty in swallowing solid food, and in December last I was consulted and diagnosed stricture of the œsophagus, and selected gradual dilatation, but they (Mr. and Mrs. Peebles) objected. I explained to them the use of the bougie and the danger of her disease, but some of their friends (?) insisted on their consulting a physician in Decatur, which they did, and was treated for "spasm of stomach."

I requested Mr. Peebles to write me, after his removal to Kansas, which he did, and the following letter will explain itself. Respectfully yours,

S. HARVEY LAMBERT.

Assumption, Ill., Nov. 2, 1883.

TWIN FALLS, KANSAS, June 16, 1883.

DR. S. HARVEY LAMBERT:

Dear Sir—I will take the liberty to write you a few lines, as I believe I owe you an apology for not writing to you as per agreement, about my wife's illness. Last winter her case developed into one of well-marked stricture of the œsophagus. She thought of coming back to see you about it, but she got bad so fast, and it was so far to come. We tried all the doctors out here in this county, but got no relief, so I took her to Kansas City, Mo., to Drs. ——— and ———, Surgeons of Kansas City Medical College. They passed a bougie down the œspohagus, commencing with small ones and increasing until they passed six different sizes.

She had not swallowed any solid food of any kind, not even as large as a pea, for three months and four days. But after the first operation she could swallow thickened soup, and after the second she could swallow almost anything she wished.

Dr. ——— said the stricture was caused by some very strong medicine given her last fall, during that spell of sickness she had. She stayed six days the first time, and went back once since and stayed two days at Kansas City. She is now about well. She was operated on once a day by the doctors.

Yours truly,

A. D. PEEBLES.

ALL the European Powers have signified their adhesion to the proposal of the Italian Government to summon a conference at Rome, with the object of making sanitary regulations, and drawing up an international sanitary code. Signor Maricini, Minister for Foreign Affairs, will shortly address a circular to the Powers on the subject.

MISCELLANEOUS.

CHANGES IN THE MEDICAL CORPS OF THE NAVY DURING THE WEEK ENDING NOVEMBER 24, 1883.

Kennedy, Stephen D., Medical Inspector: dismissed the service by sentence of a general court martial.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT UNITED STATES ARMY, FROM NOVEMBER 16, 1883, TO NOVEMBER 23, 1883.

Moore, John, Lieutenant-Colonel: relieved from duty as Medical Director Department of the Columbia. (G. O. 29, Department of the Columbia, November 8, 1883.)

Brooke, James, Major and Surgeon: relieved from duty at Angel Island, California, and assigned to duty as Post Surgeon, Presidio of San Francisco, California. (Par. 1, S. O. 162, Department of California, November 14, 1883.)

Horton, Samuel M., Major and Surgeon: leave of absence, granted October 20, 1883, extended three months. (Par. 7, S. O. 266, A. G. O., November 20, 1883.)

Bache, Dallas, Major and Surgeon: assigned to duty at Fort Adams, R. I. (Par. 5, S. O. 215, Department of the East, November 19, 1883.)

Williams, John W., Major and Surgeon: granted leave of absence for one month on Surgeon's certificate of disability, with permission to leave the limits of the Department. (Par. 5, S. O. 157, Department of the Columbia, November 12, 1883.)

Town, F. C., Major and Surgeon: until further orders to perform the duties of Medical Director Department of the Columbia. (G. O. 29, Department of the Columbia, November 8, 1883.)

Munn, Curtis E., Captain and Assistant Surgeon: assigned to duty at Fort Warren, Massachusetts. (Par. 4. S. O. 216, Department of the East, November 20, 1883.)

Winne, Charles K., Captain and Assistant Surgeon: relieved from duty at Fort Winfield Scott, California, and assigned to duty as Post Surgeon Angel Island, California. (Par. 1, S. O. 162, Department of California, November 14, 1883.)

Appel, D. W., Captain and Assistant Surgeon: granted two months leave of absence. (S. O. 68, Division of the Atlantic, November 16, 1883.)

Cochran, J. J., First Lieutenant and Assistant Surgeon: assigned to duty at Fort Bayard, N. M, (Par. 5, S. O. 236, Department of the Missouri. November 15, 1883.)

Richard, Charles, First Lieutenant and Assistant Surgeon: relieved from duty at Fort Adams, R. I. (Par. 3, S. O. 216, Department of the East, November 20, 1883.)

Wilson, George F., First Lieutenant and Assistant Surgeon: to report in person to Lieutenant Schwatka, 3d Cavalry aid-de-camp, for temporary duty in connection with the completion of report of recent expedition to Alaska. (Par. 3, S. O. 156, Department of the Columbia, November 9, 1883.